

# BUSINESS WEEK

The Atom Bomb:  
Where We Stand

ATOMIC ENERGY 1950 SPECIAL REPORT PAGE 58



R. S. Reynolds, Jr.: Finance man for Reynolds Metals' financial problem (page 80)

A MCGRAW-HILL PUBLICATION

JULY 8, 1950

TWENTY-FIVE CENTS



# Chemical Progress

News of developments from General Electric's Chemical Department that can be important to your business.

## film censor...

Here's a case where General Electric silicones fight film—the kind that can form on electrical insulators and cause current loss. How? Simple enough. A G-E silicone fluid applied to the insulator's surface greatly retards the formation of dirt and moisture films. It makes the insulators easier to clean and reduces the number of cleanings necessary to safe operation of the electrical equipment.

What's your "sticky" problem? Perhaps G-E silicones can solve it. Write for more information.



## When the squeeze is on →

depend on G-E plastics! This juice bowl for an electric mixer was molded by General Electric. G-E designers, working with G-E chemists, selected a plastics material that made possible cost reductions plus two new sales features: the bowl is practically unbreakable—and a new "agitating" principle more effectively strains juice. Another plus for plastics!



## Fit for a king!

"Regent," the sensational G-E Textolite\* pattern, is the latest of the General Electric line of resin-impregnated laminated surfacing materials. (G-E makes many of its own resins.) This new design has an intriguing three-dimensional look. It is available in five sparkling colors for surfacing kitchen cabinets, dinette tables, restaurant tables, and other applications.



Molders are producing plastics parts with amazing shock resistance—thanks to General Electric's new rubber-phenolic compounds. There's a whole family of these compounds to choose from, with different fillers to give specific properties.

Motor repair shops are simplifying rewinding operations by stocking General Electric's "all-purpose" insulating varnish G-E 9574. Suitable for practically all types of insulating applications, this varnish is easy to use and provides exceptional chemical and mechanical resistance.

Paint manufacturers are obtaining tough, durable lacquers for both wood and metal finishes by formulating with G-E 2477 Glyptal.\* This top-quality plasticizing alkyd resin provides outstanding resistance to cold checking.

**FOR FURTHER DETAILS**  
about any G-E Chemical Department product, write to Chemical Department, General Electric Company, 1 Plastics Avenue, Pittsfield 17, Mass.

\*Reg. U. S. Pat. Off.

G-E Chemical Department plants at: Pittsfield, Mass.; Schenectady, N. Y.; Waterford, N. Y.; Coshocton, Ohio; Decatur, Ill.; Taunton, Mass.; Anaheim, Calif.

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At her finger tips, she has a nationwide web of wires, cables and switchboards. In little more than a minute, she can take you to visit friends in Miami or Minneapolis or

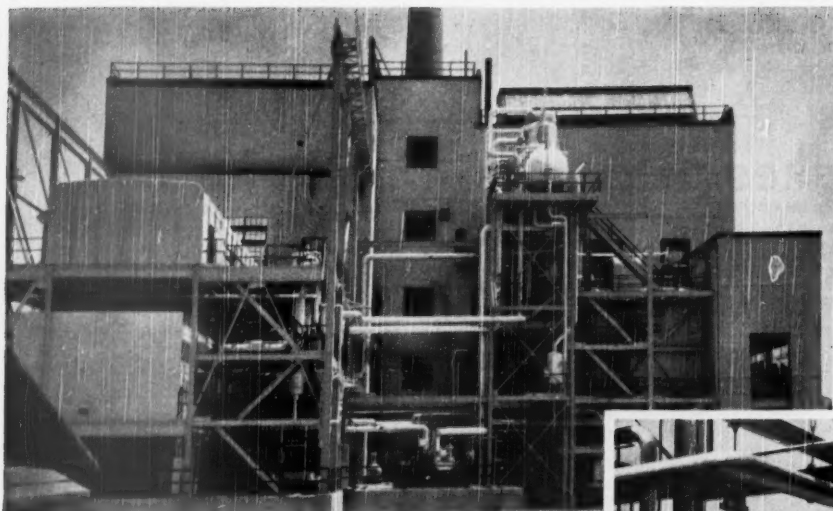
to do business in Seattle or Syracuse.

Every Long Distance call is personal and made to your order with quiet courtesy. Every call is handled as if the whole Bell System had been built just for you.

Fast, clear and constantly improving Long Distance service helps keep this big, busy country a nation of neighbors. And it does this at remarkably low cost to the user.

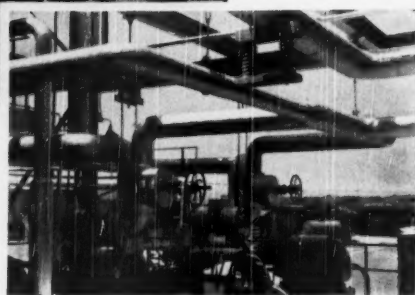
**BELL  
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## El Paso Electric Company efficiently conserves heat with **K&M** INSULATIONS

IN 1948, the El Paso Electric Company extended its Rio Grande Power Station to add 20,000 Kilowatts to the existing plant's 46,000 Kilowatt capacity. Boilers, piping, and other heated surfaces were insulated with K&M "Featherweight" 85% Magnesia for temperatures up to 600° F., and with K&M Hy-Temp Combination for temperatures in excess of 600° F.

### K&M "FEATHERWEIGHT" 85% MAGNESIA

for temperatures to 600° F.

For more than 60 years K&M "Featherweight" 85% Magnesia Insulation has demonstrated its ability to conserve heat efficiently in power plants, oil refineries, chemical plants, factories, steamships and hospitals. In fact, wherever exacting require-

ments must be maintained for temperatures up to 600° F., "Featherweight" 85% Magnesia can be used with complete confidence. It combines the high insulating qualities of basic carbonate of magnesia with clean asbestos fiber as the binding element.

### K&M HY-TEMP COMBINATION for temperatures to 1900° F.

K&M Hy-Temp Combination Insulation is used for temperatures in excess of 600° F. and up to 1900° F.; combines the greater insulation efficiency of "Featherweight" 85% Magnesia with the high heat resistance of Hy-Temp.

Your K&M Distributor will be glad to give you complete information on K&M "Featherweight" 85% Magnesia Insulation, K&M Hy-Temp Combination Insulation, or other insulations in the K&M line. Or, write us.



*Nature made Asbestos... Kearsbey & Mattison has made it serve mankind since 1873*

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# Buried Treasure

## in Your Product?



**More than likely...  
if you can dig up  
New Ways to  
make it do more  
for your customers  
...by COUNTING**



No. 1239 Predetermining Counter signals operator or actuates mechanism to stop machine at end of pre-set run.

Dig deeply into this million-dollar question: "How could *my* product increase its usefulness and sales... *by counting?*" And you may well uncover a new and distinctive merchandising appeal that will set your product apart from competition... as so many manufacturers have done.

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WIREMAKER FOR INDUSTRY

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BUSINESS WEEK • July 8, 1950

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## SPEAK WHEN SPOKEN TO...



Selectomatic has a pleasing reply for every request for service. That reply is a car going in the desired direction within a minimum of waiting time.

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That's because Selectomatic is never confused by the number or type of calls. Its unique electrical brain calmly separates the "ups" from the "downs" and regulates the entire elevator bank to give the most efficient service possible—and it does it all instantly and automatically.

Unlike other systems, Selectomatic doesn't depend on a starter's hunch for when to send which cars where. With Westinghouse Selectomatic automatically matching service to demand, the starter can concentrate on his most important job... directing traffic.

**\*Selectomatic, an exclusive Westinghouse development, completely supersedes the previous accepted elevator standard... signal control.**

See and hear the complete story of Westinghouse Selectomatic. Write on your letterhead and we'll gladly arrange a showing, at no cost, of our sound motion picture "Speeding Vertical Transportation With Selectomatic Elevators." Elevator Division, Dept. A-1, Westinghouse Electric Corporation, Jersey City, New Jersey.

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**THE ELECTRIC AUTO-LITE COMPANY**  
Wire and Cable Division  
Port Huron, Michigan      Hazleton, Pennsylvania

# AUTO-LITE

die castings  
plastics  
wire and cable  
industrial  
thermometers

## Highlights In This Issue

### Panic Buying

• All over the country, consumers are rushing to put in their bid for goods a war would make scarce. P. 21

### Product Mix

• You sell a lot but make little profit. Maybe, you are selling the wrong things. P. 42

### Quest of the Brown Shrimp

• It saved Brownsville's bacon. Now Brownsville is doing its best to protect it. P. 66

### Down, Down, Down

• Last year was the worst hotels have seen since prewar. This year will be no better. P. 78

### Except for Finances . . .

• Reynolds would be in fine shape. A decade of expansion has left it with a debt problem. The Cover. P. 80

### Can a Union Pay Off?

• Two companies have found different ways to let the unions in their plants contribute to profits. P. 86

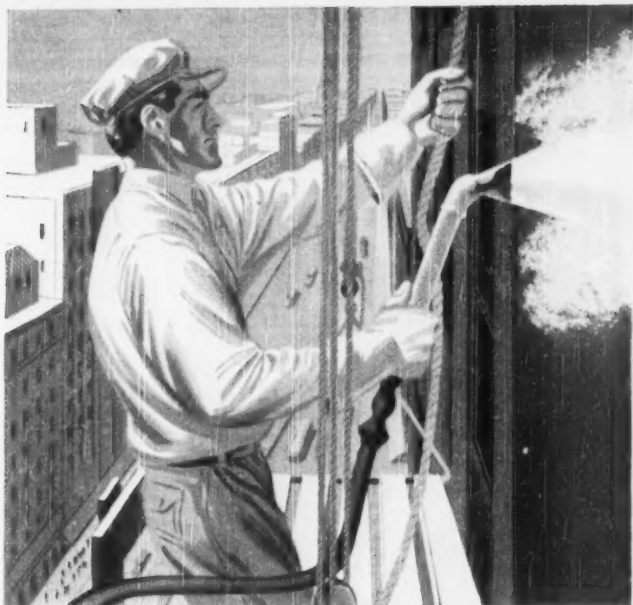
### Price of Korea

• It's deep involvement everywhere in Asia—deeper than in Europe. P. 97

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**SINEWS OF "CORDURA" YARN** make steam hose lighter, more flexible and safer. They provide full strength with fewer plies. Such lighter, more flexible hose means faster cleaning . . . less worker fatigue.



## Why this yarn gives you room for improving products

IT'S OFTEN POSSIBLE to reduce the bulk of a strength section by reinforcing the product with Du Pont Cordura® High Tenacity Rayon. For "Cordura" yarn is inherently stronger than natural fibers commonly used. It is made in continuous filaments with no short ends to pull apart under strain . . . and it is scientifically uniform . . . a yarn without weak spots.

Because "Cordura" reinforcement takes up less space, hose can be made thinner, more flexible, yet stronger . . . tires, thinner and cooler running. And "Cordura" packs extra strength into conveyor belts without increasing bulk—gives them the flexibility to perform better.

Best of all, "Cordura" builds these extra sales advantages into most products *without increasing cost*. That's why "Cordura" may be just the right yarn to help you improve your product or process, or bring a new one into production.

\*REG. U. S. PAT. OFF.



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for RAYON . . . for NYLON . . . for FIBERS to come . . . look to DU PONT



## BUILDERS OF THE BRASS INDUSTRY



### PIERCE N. WELCH

(Fifth President of BRISTOL BRASS)

*The man who dropped the Clock . . . who enlarged and refinanced the Bristol Mills . . . who saw Bristol Brass through the 1907 panic . . . and who spoon-fed the business by stimulating the demand for sales-premiums*

**T**HIRD of the Welch clan to become head of The Bristol Brass and Clock Co., new president Pierce immediately shortened the firm-style to The Bristol Brass Co., then completed the expansion program sparked by director Charles S. Treadway.

The seven years of Pierce Welch's presidency saw a mounting momentum in world events: Independence for Cuba and Panama, the Canal Treaty, world's first labor government (which lasted a few months) in Australia, Luther Burbank, the Sinn Feiners, T. R. out and Taft in, the North Pole dis-

covered and wireless telegraphy added to the wonders of the world, the Russo-Jap war and the first Russian revolt.

Meantime, Bristol rolled along in high gear, a lot more steadily than the new-fangled autos you began to see everywhere. And Bristol's spoon-shop, boomed by souvenirs of the battleship Maine, made Bristol's "World Brand" plated flatware a favorite premium of soap, cereal and flour merchants. Then copper tycoon Gus Heinze went to the wall, and the country went into a tailspin.

But the bread-and-butter products of the

Bristol mills . . . Brass sheet, rod and wire . . . pulled the company through as they have before and since. For word had been well-spread that Bristol gave you nothing but good Brass, and that you got it when they said you would. That much is still true. And it's also true that today Bristol makes Brass a lot better, makes far more of it, and has delivery, warehouse and distribution facilities that will give you, wherever you are (short of the Rockies) the alloy you want, when you want it.

**One Hundred Years of BRASS made "BRISTOL FASHION"**

*Like the world-famed merchant ships from Bristol, England . . . Always prompt, shipshape, reliable*  
The BRISTOL BRASS CORPORATION, makers of Brass in Bristol, Conn. since 1850



# BUSINESS OUTLOOK

BUSINESS WEEK

JULY 8, 1950



Few certainties appeared in the confusing situation that confronted business and government leaders this week. But this much is sure:

The physical volume of general business was rapidly nearing new records as the second quarter ended.

There is nothing to prevent further new highs the rest of this year.

Dollar volume of business probably hasn't quite reached the 1948 peak. That's because prices are quite a bit lower now.

Even so, it is doubtful if the total value of goods produced and services rendered now is much below the top annual rate of \$270-billion set in 1948's last quarter. In the next few months, we will beat that.

In fact, the chairman of the President's economic advisers, Leon H. Keyserling, sees an annual rate of \$278-billion by yearend.

It's altogether probable that he'll prove right—even if we run into shortages. For shortages will bring rising prices. And that would boost the dollar value of all goods and services.

What this adds up to: highest gross national product ever.

Record gross national product means more spending power for all. Government tax income will rise. Business' profit rates will benefit. And consumers' incomes will grow apace.

Greatest danger of soaring income is that business, government, and individuals will bid against one another for available goods.

Clearly, if government arms spending rises, this will happen.

Thus Korea can prove a key factor. If the situation gets worse, our arms bill will go up. Costs of feeding and clothing the armed forces will rise. There won't be enough stuff to go round.

Sooner or later, that would change the shape of the economy. Limitations on civilian output, priorities on materials and labor, price controls, and consumer rationing would emerge in greater or lesser degree.

That's the trouble with piling war needs on a civilian boom.

Tax law revisions, voted by the House last week, won't get far if the world situation changes.

Treasury Secretary John W. Snyder warned the Senate finance committee of that in testimony on Wednesday. The implication, quite clearly, is higher taxes. A corporate excess-profits tax would be likely.

That, plus ceiling prices, could squeeze stockholders' incomes.

Barring the very real possibilities of the sacrifices necessary to carry on a war, prospects are bright far into the future.

More people will be working this summer than ever before—and at the highest hourly wages ever. That bolsters purchasing power.

Employment in June was nearly 61½ million. That's the highest on record for that month. Moreover, it falls less than 150,000 under the post-war peak of 61.6 million in July, 1948.

July and August this year should see jobs for 62 million or more.

More people have jobs or are looking for them than ever before.

The civilian labor force last month was just under 65 million. That is more than a million above any previous figure. The reasons aren't hard

# BUSINESS OUTLOOK (Continued)

BUSINESS WEEK  
JULY 8, 1950

to find. This year saw a record crop of college graduates. And jobs are easy to get, so a large number of occasional workers are lured into the market.

Thus even with employment reaching a near-record in June, unemployment rose a third of a million. The jobless totaled 3.4 million.

•  
Employment in agriculture this year is influenced by two trends:

(1) The long-term downtrend, due to mechanization, is continuing—and may even be speeding up due to more efficient machines.

(2) With city jobs easier to get, fewer hands seek farm work.

The net of this is that farm employment last month exceeded 9 million only slightly. That's three-quarters of a million less than last year—when nonfarm jobs were relatively hard to get.

•  
Farm income this year probably will decline a good deal less than generally had been expected.

For one thing, demand for farm products (based on high consumer income) is topping expectations. That is sustaining the price of both steers and hogs at levels very profitable to livestock raisers.

Equally important, the Korean crisis has stiffened farm prices. Supplies that looked like surpluses yesterday are needed reserves today.

Thus with crop output down only a little from 1949 and prices better than anticipated, the farm market looks healthy.

•  
Next week's crop report probably will show relatively small changes in wheat prospects. A private report, that of C. M. Galvin (with James E. Bennett & Co.), cuts both winter and spring wheat yields slightly.

•  
Consumer credit continued to play a prominent part in the boom—even though you may worry about how it could affect personal finances later.

Instalment purchases are continuing at the headlong rate that marked the closing months of 1949. This is largely responsible for all consumer borrowing soaring to a new record of \$19.1-billion at the end of May.

That was a rise of \$481-million in a month; it carried the total \$3¼-billion above a year earlier. And instalment business (conspicuously, autos) accounted for three-quarters of the May increase.

•  
Spectacular gains in department-store sales last week shouldn't be blamed automatically on "war-scare buying."

The Philadelphia Federal Reserve District, for example, chalked up a 22% increase. But, due to the way the July 4 holiday fell, this year had an extra shopping day. When the current week's results are posted, they will presumably be below last year because of one less sales day.

•  
Business can look forward to the future, whatever it holds, with confidence at least that most companies are well-heeled.

The Securities & Exchange Commission's latest report shows that all corporations hold net working capital of \$69-billion, a new record.

Current assets hit \$124.8-billion. Of this, \$30.4-billion was in "cash items"—cash, bank deposits, and government bonds.

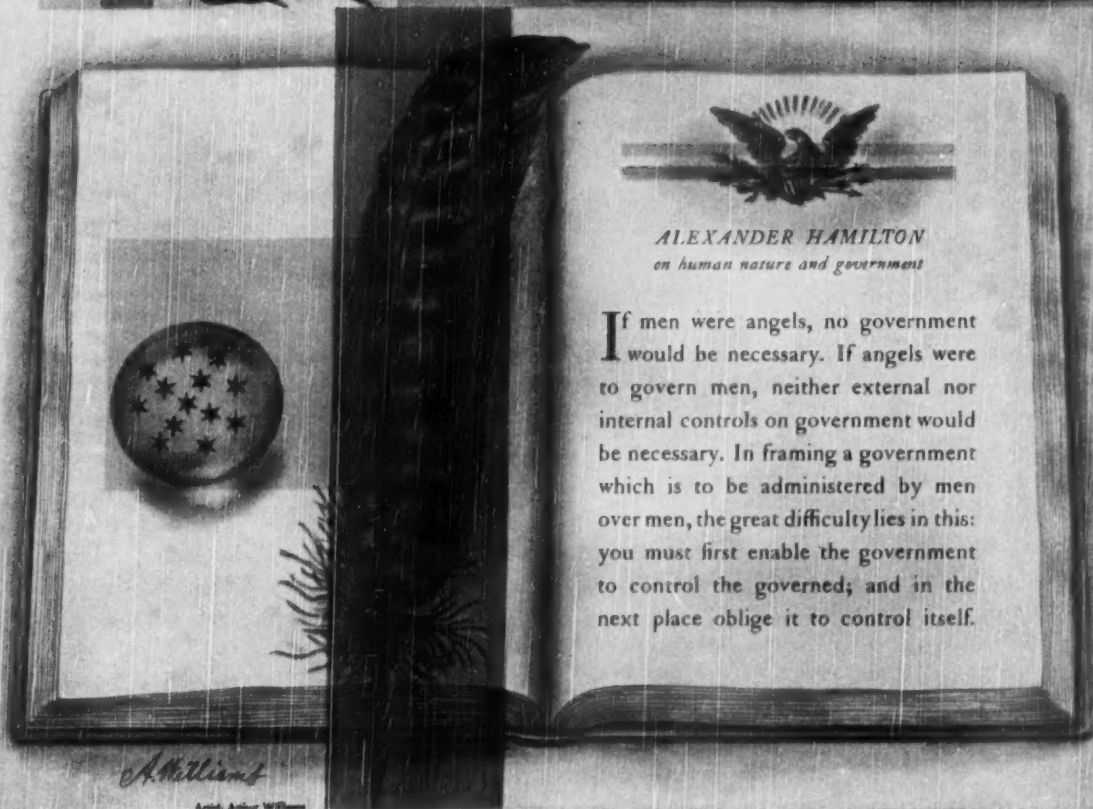
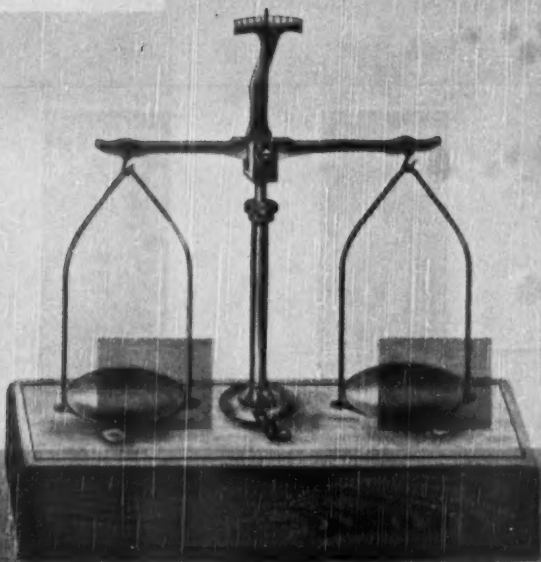
And, even while financing higher inventories and receivables, corporations managed to wipe off nearly \$1-billion more of short-term debt.

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Great Ideas of Western Man... ONE OF A SERIES



*Hamilton*  
First U.S. Secretary  
of the Treasury, leading  
Federalist of his day,  
signer of the Constitution



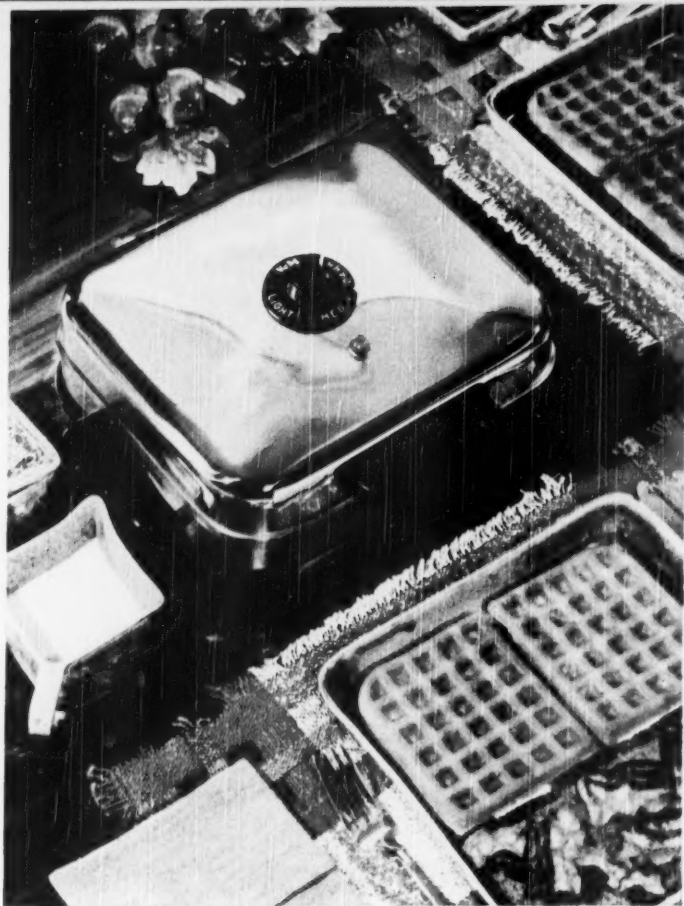
Artist: Arthur Williams

CONTAINER CORPORATION OF AMERICA



the  
Aristocrat  
of the  
Breakfast-table

with  
**UDYLITE**  
**Bright Nickel**



WAFFLE IRON BY KNAPP-MONARCH COMPANY

The crowning touch to a faultlessly appointed table — is this Knapp-Monarch Waffle Iron. Its flawless, gleaming finish will shine in any company—for years and years of usage . . . because under the chromium surface film lies a substantial coating of Bright Nickel —applied the Udylite Way.

Based on specially developed Udylite brighteners in a high-chloride bath—Udylite's Bright Nickel Process gives faster plating — by at least 50% — eliminates nickel buffing — gives a smoother, brighter, more

uniform surface. This means not only vastly superior quality of work but *much more plating* without additional manpower or costly equipment alteration.

Your nearby Udylite Technical Man will be glad to show you how the Udylite Bright Nickel Process, and other plating methods developed by Udylite Research, can help you with your plating problems. Call him in today for a consultation on your operations. There's no obligation. Or write direct to *The Udylite Corporation, Detroit 11, Michigan.*

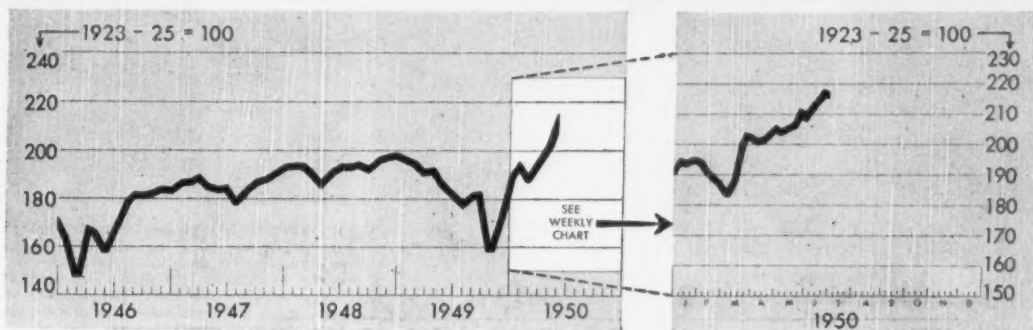
**PIONEER OF A BETTER WAY IN PLATING . . .**

TESTED SOLUTIONS • TAILORED EQUIPMENT  
AUTOMATIC CONTROL IN METAL FINISHING

THE  
**Udylite**  
CORPORATION



# FIGURES OF THE WEEK



## Business Week Index (above) . . . . .

### PRODUCTION

	\$ Latest Week	Preceding Week	Month Ago	Year Ago	1947 Average
Steel ingot operations (% of capacity) . . . . .	92.6	+101.2	101.3	61.2	97.3
Production of automobiles and trucks . . . . .	194,259	205,334	146,825	144,822	98,236
Engineering const. awards (Eng. News-Rec. 4-week daily av. in thousands) . . . . .	\$45,025	\$43,663	\$40,453	\$29,802	\$19,433
Electric power output (million kilowatt-hours) . . . . .	6,115	6,102	5,632	5,410	3,130
Crude oil and condensate (daily average, 1,000 bbls.) . . . . .	*5,435	5,355	5,205	4,874	3,842
Bituminous coal (daily average, 1,000 tons) . . . . .	1,757	+1,740	1,681	1,989	1,685

### TRADE

Miscellaneous and l.c.l. carloadings (daily average, 1,000 cars) . . . . .	77	77	76	71	86
All other carloadings (daily average, 1,000 cars) . . . . .	58	57	54	63	52
Money in circulation (millions) . . . . .	\$27,026	\$26,926	\$27,088	\$27,426	\$9,613
Department store sales (change from same week of preceding year) . . . . .	+1%	+6%	+2%	-6%	+17%
Business failures (Dun & Bradstreet, number) . . . . .	156	147	168	177	228

### PRICES (Average for the week)

Cost of Living (U. S. Bureau of Labor Statistics, 1935-1939 = 100), May . . . . .			167.3	169.2	105.2
Spot commodity index (Moody's, Dec. 31, 1931 = 100) . . . . .	408.0	+397.8	397.8	333.6	198.1
Industrial raw materials (U. S. Bureau of Labor Statistics, Aug., 1939 = 100) . . . . .	242.4	240.9	239.9	206.6	138.5
Domestic farm products (U. S. Bureau of Labor Statistics, Aug., 1939 = 100) . . . . .	335.7	327.6	330.1	292.1	146.6
Finished steel composite (Iron Age, lb.) . . . . .	3.837¢	3.837¢	3.837¢	3.705¢	2.396¢
Scrap steel composite (Iron Age, ton) . . . . .	\$37.67	\$37.67	\$40.92	\$19.33	\$19.48
Copper (electrolytic, Connecticut Valley, lb.) . . . . .	22.500¢	22.500¢	21.600¢	16.206¢	12.022¢
Wheat (No. 2, hard winter, Kansas City, bu.) . . . . .	\$2.17	\$2.13	\$2.25	\$1.91	\$0.99
Sugar (raw, delivered New York, lb.) . . . . .	5.86¢	5.81¢	5.75¢	5.85¢	3.38¢
Cotton (middling, ten designated markets, lb.) . . . . .	34.09¢	33.80¢	33.78¢	32.58¢	13.94¢
Wool tops (Boston, lb.) . . . . .	\$2.33	\$2.33	\$2.25	\$2.08	\$1.41
Rubber (ribbed smoked sheets, New York, lb.) . . . . .	31.50¢	29.57¢	33.35¢	16.38¢	22.16¢

### FINANCE

90 stocks, price index (Standard & Poor's Corp.) . . . . .	140.1	146.8	149.2	113.7	78.0
Medium grade corporate bond yield (Baa issues, Moody's) . . . . .	3.33%	3.30%	3.26%	3.48%	4.33%
High grade corporate bond yield (Aaa issues, Moody's) . . . . .	2.64%	2.62%	2.62%	2.70%	2.77%
Call loans renewal rate, N. Y. Stock Exchange (daily average) . . . . .	14-14%	14-14%	14-14%	14-14%	1.00%
Prime commercial paper, 4-to-6 months, N. Y. City (prevailing rate) . . . . .	14-14%	14-14%	14-14%	14-14%	4-4%

### BANKING (Millions of dollars)

Demand deposits adjusted, reporting member banks . . . . .	47,944	48,040	47,533	46,093	+27,777
Total loans and investments, reporting member banks . . . . .	67,980	+67,905	67,103	62,609	+32,309
Commercial and agricultural loans, reporting member banks . . . . .	13,595	13,532	13,359	13,177	+16,963
Securities loans, reporting member banks . . . . .	2,369	2,289	2,428	2,613	+1,038
U. S. gov't and gov't guaranteed obligations held, reporting member banks . . . . .	36,665	+36,935	36,456	34,178	+15,999
Other securities held, reporting member banks . . . . .	5,738	5,709	5,614	4,549	+14,303
Excess reserves, all member banks . . . . .	520	670	530	679	5,290
Total federal reserve credit outstanding . . . . .	18,567	18,261	17,935	19,875	2,265

\*Preliminary, week ended July 1.

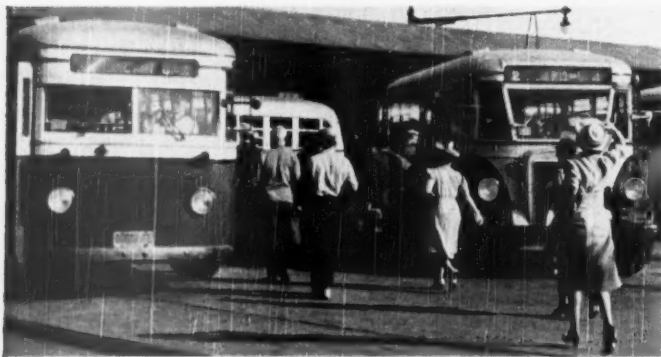
\*\*Estimate (BW—Jul. 12 '47, p. 16).

\*Revised.

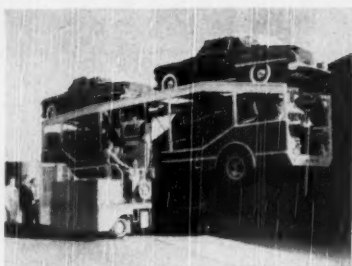
†Date for "Latest Week" on each series on request.



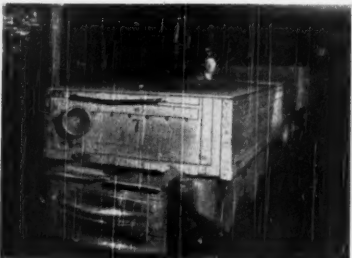
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# WASHINGTON OUTLOOK

WASHINGTON  
BUREAU  
JULY 8, 1950



The Washington mood of studied optimism is significant. It should be kept in mind as you appraise day-to-day news of the Korean crisis. At midweek, it seemed to preclude any hasty move toward mobilization and economic controls, barring some new and overt act by the Russians, of course.

**It's not a faked attitude, to mislead.** Truman and his military chiefs still are convinced a "big" war isn't close—that odds against it are long.

**And it is not cocky overconfidence.** The situation is grave. But it may be weeks, even months, before you know how well the Russian risk was calculated. Meantime, the effort will be to reassure, as a safeguard against panic buying which could create an economic emergency on the home front.

**Standby plans to control the economy are being made.** Officials play these down, of course. For even the planning tends to frighten and bring on the very sort of "scare" buying Truman wants to avoid (page 21).

**The range of the plans is complete.** It runs all the way from limited restrictions on such basic materials as steel to absolute control of everything, with the government telling every man, woman, and child how to live—or die.

**The planning is precautionary, "just in case."** There's no present intention of sending mobilization legislation to Congress.

**A snap-judgment decision to mobilize might backfire,** both economically and politically. It would produce a tight economy almost immediately. Then, if the crisis should collapse, the reaction would be serious—might make a recession. Such a development would lay Truman open to charges of a grab for power to push his Fair Deal objectives. So Truman will wait and see.

**A rise in military procurement seems sure—the minimum to expect** out of the crisis. Truman can order it without special action by Congress.

**New defense orders will be going out in a month or so** under the regular defense budget for fiscal 1951 (Congress will vote this in a matter of weeks). The expectation is that the new money will be committed rapidly, to gear arms production to a faster pace. Then, if things look bad next year, Congress can rush extra money in January. The move can be made without frightening dramatics. And the effect on business would be both gradual and moderate.

**Shift of arms aid to the Far East, at the expense of Europe,** is now unavoidable. Most of the fighting equipment we are giving to Europe has been coming out of Army, Navy, and Air Force stocks. But with the U. S. engaged in Korea and on the alert for fresh trouble in the Far East, the extra demand for arms is more than can be met. This shows how Russia is spreading U. S. strength. It will hasten the decision scheduled for late summer on how Europe's military strength is to be boosted and integrated.

**Korea hasn't cost Russia her advantage in the East-West struggle.** True, Russia is on notice that the U. S. will fight further Communist expansion. But Russia is still free to maneuver. She can create "incidents" to further engage the U. S., while keeping herself free of the fray if she wishes to avoid a World War III showdown.

•

Congress is proceeding on a business-as-usual basis, which is the official

# WASHINGTON OUTLOOK (Continued)

WASHINGTON  
BUREAU  
JULY 8, 1950

line. There will probably be relatively minor revisions in its "must" list.

**Cuts in defense funds are out.** Chances now are that funds for fiscal 1951 will exceed Truman's \$13.5-billion ceiling by upwards of \$500-million.

**More money for the atomic program** is in the mill. And the assumption is that it will be used to push the hydrogen bomb project.

**The 2¢-per-lb. copper duty will be suspended,** retroactive to July 1.

**The tax bill is moving ahead,** with the hearings before the Senate Finance Committee scheduled to end either next week or the following week. There's no guarantee of final enactment, though. It will be some time in August before Congress gets through with the bill. Whether the Senate brings the bill to a vote will depend on conditions at the time.

Truman's small-business financial-aid bill is souring in Congress.

Senate committee hearings have produced little or no enthusiasm. On the House side, leaders haven't even made plans for hearings. This doesn't mean the bill is dead. But it isn't on the "must" list, and time is short.

•  
**The RFC is in a mess.** Terms of all directors expired June 30, and there's legal doubt whether the board can act on loans until members have either been reconfirmed by the Senate or replaced.

**Small business loans aren't involved.** RFC branch managers can O.K. them up to \$100,000—or even \$300,000 if there's bank participation.

**But big loans may be delayed**—direct advances over \$100,000.

•  
**A White House decision on maritime policy is in the making.** Since the end of the war, there has been no clear-cut policy, and the merchant fleet is shrinking. Expectation is that Truman will O.K. development of a subsidy program which will maintain the present fleet and add new high-speed tankers and passenger ships. It will be geared to defense needs, but probably won't get going before next year.

•  
**The Republican fight for House seats** will center in these states: Connecticut, New York, New Jersey, Pennsylvania, West Virginia, Ohio, Indiana, Illinois, and Missouri. In '48, the GOP lost 54 House members in these nine states. Now it counts heavily on such big-name statewide candidates as Taft in Ohio (where the loss was eight) and Gov. Duff in Pennsylvania (where the loss was 11) to help win them back.

•  
**Is production capacity rising fast enough?** Feeling is strong within the Administration that expansion plans of some basic industries are not adequate for the nation's economic and defense needs. Electric power, non-ferrous metals, and steel are the industries most often mentioned (page 19).

**Korea will bring the issue into the open again.** Even if Korea blows over, you can expect new pressure from government for faster expansion. It will be backed with the threat that if private capital doesn't do the job, then something like the old Murray-Spence bill will be used to bring government in.

*This girl can write and calculate an invoice*  
**FASTER**



*than this girl can copy it!*



*The Burroughs Calculating-Billing Machine writes and calculates an invoice in less time than it ordinarily takes just to copy it.*

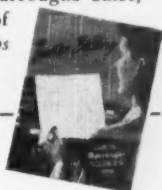
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## Military Economics Takes Over

- Whatever the outcome in Korea, relations between business and government have now changed fundamentally. Munitions are no longer a byproduct; they are the main show.
- War or no war, the government will be forcing—and maybe financing—further expansion of industrial capacity.
- New Dealers and war planners were already thinking this way. Korea has given them the impetus they needed.

The U.S. businessman's five-year vacation from government controls is ending. The first two weeks of the Korean crisis make that plain. Win, lose, or draw in Korea, we are beginning a period in which the government will take a more and more active part in directing the economy.

The fighting in Korea and our other commitments in the Far East have already upset the budgetary applet. President Truman's ceiling on military spending has gone out the window. Defense expenditures in the coming year will run \$2-billion or more over previous estimates—even if we don't get involved in more fighting than now.

• **Ceiling**—The civilian economy is already running pretty close to capacity, especially in production of hard goods (page 26). There's not much room to shoe-horn in a lot of new military business. At the first sign of delay, you can expect the army to start using priorities—informal at first, formal later.

Beyond that, there is the basic question of building production capacity for an all-out war. Nobody knows for sure what Russia intends to do. But Korea shows that we have to be ready to go the limit. The more capacity we have when and if total mobilization comes, the better off we will be. And that means that from now on, the military will be demanding the kind of expansion that doesn't ordinarily pay for itself—the kind that requires some sort of direct government promotion.

Government intervention in business won't come overnight—unless Russia decides to make a fight of it immediately. It will begin slowly, build up and subside and build up again as the tempo of our military operations changes.

• **Calm and Caution**—In fact, the immediate line that Washington is taking is soothing.

Businessmen are writing in to Washington, asking: What are we supposed to do? Do you want us to get ready to handle a flood of military orders? Or should we just stand pat?

The answer they get is: Don't do anything. Don't worry about priorities and allocations. Leave your phantom orders on the shelf. Don't count on converting to war production tomorrow or the next day.

The same sort of replies go to retailers and consumers who want to know about rumored shortages of auto tires, sugar, and the like. Truman is trying to create a climate of calm and caution. After all, he says, the Korea fighting is police action, not war.

• **What Next?**—But longer range, there are no simple answers in Washington. The whole attitude of the Administration is: We're going to wait and see

what develops before making any dramatic moves.

This doesn't keep planners in the Pentagon, at National Security Resources Board, and the Munitions Board from planning. And businessmen planning on their own have got to have some idea of what the government is thinking about, as well as what the government is doing.

As Washington sizes things up, the shift from diplomatic squabbling with Russia to shooting at a Russian satellite could have three consequences:

(1) **Total war.** This is remote, but it also would make all planning problems simple. The government would take over. The civilian economy would be cut to the bone. Materials and men would be allocated, in industry as well as at the front. In that kind of economy, expansion of capacity would be programmed on the same basis as munitions.

(2) **Limited mobilization.** Russia could force the country into this by ordering a series of Korea-says, in Indo-China, Iran, and Yugoslavia. This would involve a compulsory right of way for military orders but no attempt to schedule nonmilitary production. Perhaps there would be some price control. And strict credit control to lessen the demand for cut-back civilian goods.

(3) A return to a "hotter" cold war, once the Korean job is cleaned up. No one expects the temperature to drop back to the cold war of Saturday, June 24. Our commitments have grown.

It is No. 3 that the Administration is banking on. The feeling is that Korea doesn't mean war. Rather Washington hopes that it will be proof to Russia that the West will act quickly to beat back any armed adventures. No more military probings are expected—at least for awhile.

• **More Munitions**—At the very least, though, Korea does mean that Truman's decision to maintain defense spending at a \$13-\$15-billion plateau will be ditched. Congress probably will be getting requests from the Pentagon for as much as \$17-billion in fiscal 1952.

And the Pentagon will probably get its way. Hereafter, the military will have a lot more to say about how much defense is needed; less attention will be paid to what economists say about the inflationary impact of rearmament. Ko-

### The Atom Bomb Today

Is the Atomic Energy Commission on top of its job?

It's probably the solidest and most competent organization in the government—but its very strength is its greatest danger.

Is the hydrogen bomb worth building?

Perhaps—but there's a good chance it will weaken the country more than it strengthens it.

Will we be getting power from the atom soon?

Yes—but in a way no one expected.

REPORT TO EXECUTIVES .....P. 58

rea brought home the fact that "it can happen."

• **Capacity**—More defense raises the question of capacity—of American industry's ability to produce the extra stuff that's needed. Right now, Administration economists think the peacetime economy is being held down by production ceilings in key spots. Steel, for instance, has been operating at 102% of capacity, and it still can't meet demand comfortably.

So, they say, aren't you headed for crippling shortages if the heat is turned on? In their view, steel's planned 2-million-ton-a-year increase in capacity isn't enough. The country needs 110-million tons now, 10 million more than we have.

You get the same kind of talk about electric power, nonferrous metals. NSRB has brought out a report on electric capacity. Though it shows that there's enough power over-all today to take care of peacetime needs, there is a shortage in the Northwest, and TVA is in for a pinch because of the atomic buildup at Oak Ridge.

In a war, power needs all over the country would skyrocket. And by then, there wouldn't be time or materials to build new capacity. Hence, NSRB staff members are playing with the idea that electric utilities should be expanding more now than their forecasts of peacetime consumption would justify. This obviously would mean operating well below capacity as long as there was no war. And that would mean that in one way or another the government would have to foot the bill for extra facilities.

Nonferrous producers are already operating overtime. To get more output, you will have to start up high-cost marginal mines again.

• **Planned Expansion**—These facts jibe neatly with the schemes the planners have long been nurturing—government guiding of expansion as laid down in last year's Murray and Spence bills.

Korea alone isn't enough to persuade Congress to give them what they want. But it does create an environment of worry. And it will produce at the very least a jawbone campaign designed to pressure industry into expanding at a faster rate.

How will all this be served up? Probably in more presidential pronouncements about a \$300-billion economy that's needed to protect us against communism. You'll see it, too, in testimony of the Council of Economic Advisers on Capitol Hill.

But there will be more than just talk from now on—and more than just welfare economics behind it. The U.S. is no longer completely on a peacetime footing. It is moving into a period of at least partial mobilization. And from this point forward, the rules of the last five years won't apply.

## In the Middle

**Big Steel, trying to get a health insurance plan for employees, got caught in a Cleveland medical feud.**

When U.S. Steel came to terms with CIO's United Steelworkers last fall, it agreed to set up a health insurance program as part of the settlement. But it didn't figure on winding up smack in the middle of a feud between Cleveland doctors and Cleveland hospitals with the threat of a law suit on its hands.

Here's what happened: After the union contract was signed, the corporation shopped around for a health insurance plan. The one it figured was best was the deal offered by Pittsburgh's Blue Cross—hospitalization coverage organization—which not only matched all the other bids, but also offered some extra hospital services as well.

• **Doctors Gripe**—U.S. Steel adopted the plan for all plants under its USW contract, including those at Cleveland. That's where the trouble started. As soon as Cleveland's Academy of Medicine—the doctors' professional group—heard that Steel's Cleveland plants would be covered by Blue Cross, it got mad and called in some lawyers.

The Cleveland doctors claim that hospitals are encroaching on the do-

main of the privately practicing medical man, that they are offering services that should be only given by private medics, that they are letting nonprofessionals administer services that doctors should perform. Blue Cross, which pays hospitals directly for medical services rendered to hospitalized patients, is furthering this, they say. The doctors declare that if U.S. Steel insures Cleveland workers with Blue Cross, they will sue the corporation under an Ohio law which forbids a corporation to practice a profession.

• **Alternate Plan**—But the doctors have a plan of their own that they would like to see Steel adopt for its Cleveland workers. Theirs will be offered through Medical Mutual of Cleveland, Inc., which is the Cleveland unit of Blue Shield. (Blue Shield provides medical and surgical benefits for hospitalized patients and operates directly between the doctor and the patient.)

But this plan has bugs, too. USW's regional director in Cleveland, Bill Donovan, has told the doctors that he doesn't want medical and surgical service switched from Blue Cross to Blue Shield. Besides, he has said that the union will fight efforts of medical men to raise their rate schedules. Cleveland doctors have been doing some talking lately about boosting fees.

Chances are, however, that once the Academy of Medicine gets its plan into operation, U.S. Steel will ditch Blue Cross and adopt the doctors' scheme.



## Snug Harbor for Pacific Sailors Union

New headquarters building for the Sailors Union of the Pacific (AFL) is more than just a union headquarters. It is also a hiring hall and a home away from home for sea-

men when they hit the beach at San Francisco. Besides union offices, the \$14-million building, finished in Italian marble, has a gymnasium, bar, and restaurant.

# Few Customers Are Panicky

So far, war scare has brought no rush to the stores—except for tires. West Coast and Southwest are buying the hardest. Car market feels boom; so do appliance dealers. But panic is spotty.

Fears that the Korea war scare would bring panic buying have not been confirmed—yet. Only on the West Coast and in the Southwest has there been anything approaching a war-scare buying boom. Other sections report rushes on one item or another—but the things that are being snapped up in one place are in the doldrums elsewhere.

Tires are an exception. Passenger-car owners and truck-fleet owners almost everywhere have been stepping up their buying in the past two weeks. One result of this was a good-sized ad last Wednesday in newspapers all over the country. It was signed by General Tire & Rubber Co., and the headline read: "There Is No Tire Shortage—No Threat of One."

Here's how the situation looked on a spot check at midweek:

**San Francisco.** Some evidence of scare buying in all heavy consumer goods. Particularly heavy in autos. One dealer says, "Every day has been like Saturday;" he has sold in a week almost as many cars as in any recent month. Another says he's swamped with customers who'll take any car they can get any time they can get it. There's some buying of appliances for use six or eight or 10 months hence, but not much.

**Seattle.** Most noticeable effect shows up in auto market. Used cars, too. Customers not so choosy on colors, models, extra equipment. Tires moving well in some stores, not in others. Most interest is in truck tires. Fleet operators want to be sure of three things: (1) enough tires; (2) natural rubber, not synthetic; and (3) price protection.

Appliance picture spotty. One dealer says, "We've had a lot of shoppers in the past two or three months; now they're turning into buyers." But another's store was empty despite a big advertising campaign.

**Los Angeles.** Real scare buying on autos and appliances. New- and used-car dealers report double and triple sales. All appliance dealers report tremendous surge in sales, particularly stoves and refrigerators. Many customers say they don't need the stuff yet but want to be sure to get it while they can.

**Houston.** They're buying everything from autos to facial tissues. Surge especially noticeable in tires. One large tire store had people lined up all day Saturday (July 1). Mostly no trade-ins; that means they're buying them to store away.

**Tulsa.** Big buying surge in tires. Most

buyers taking complete sets with no trade-ins. Some scare buying of sugar and coffee.

**Denver.** Little that looks like real hoarding. Big swell in tire buying, but most dealers say no more than is normal for just before July 4. Of three slow-moving makes of cars, only one reports a spurt. No stir in groceries.

**Minneapolis.** Some scare buying of tires and sugar. Tire buying is hectic, both passenger cars and trucks. Rush for sugar mostly in rural areas—maybe because it's canning season.

**St. Louis.** Most noticeable effect on tire sales, particularly truck tires for fleet owners. Big increased demand for refrigerators; only a little on new and used cars. There has been a rush on sheets and pillow cases—and soap powder.

**Chicago.** No evidence of any panic buying. Some reports of tire hoarding, but most dealers say tire sales only seasonally high. Grocers pooh-pooh stories of sugar hoarding.

**Detroit.** Little indication of panic buying. Some upward swing in refrigerators, washing machines, freezers.

**Cleveland.** No panic buying in appliances or autos. But marked increase in sugar and shortening.

**Cincinnati.** Much talk, some increase

in buying, but no panic. Tire sales very heavy. Some auto buyers looking for immediate delivery, regardless of make.

**New Orleans.** No effect. One appliance dealer said: "Scare buying? Hell, there's no buying. Our sales have fallen off tremendously."

**Atlanta.** No panic buying, but sales are up.

**Miami.** Tires selling like hot cakes. Heavy buying also in autos, linens, soap.

**Washington.** No signs of panic buying except for a few appliance dealers.

**Boston.** No indication of war-scare buying. A few people, maybe, on tires, appliances—one man bought a motorcycle and a scooter "just in case."

## Detroit Gets Worked Up In One-Day War Boom

It happened so fast, Detroiters couldn't believe their eyes—and didn't want to. Within hours of the news-break on U.S. intervention in Korea, government contracting officers were swarming around the auto plants, firming up delivery dates on old contracts, placing new ones. There were hasty conferences in plants that had been important war material producers in the past. It looked like production preparedness again on a big scale.

• **What's Up?**—It was hard to tell just what was going on. The news did leak out from the scuffle that Reo had just booked a \$24-million government order for 3,900 Army trucks. They were special six-by-sixes, nicknamed "Eager Beavers," with tubes running fore and aft to inhale and exhale water so that the trucks could run under 6 ft. of water. At the same time, Reo contracted to supply Studebaker with engines, cabs, sheet metal, and parts for assembly of 4,000 more military vehicles.

Then the government men left town—just as abruptly as they had come in. That gave Detroiters a chance to think. And thinking produced a lot of sheepish grins.

• **Same Old Thing.**—Somebody remembered the date, June 27, very close to June 30—the end of the government's fiscal year. And everybody remembered the ancient government tradition: Never let the year end without getting every dime of your appropriation spent or under contract. If you do, Congress will cut you down next year.

Washington confirmed it: There were no orders to put the nation's standby preparedness program into play. In fact, there hasn't even been time to gear military spending to the Korean situation. The actual fighting there preoccupies Defense and State. They haven't decided yet what the next step will be.

## Double Reverse

Korean news caused a lot of nerves last week—and produced some strange results. Here's one of the stranger ones:

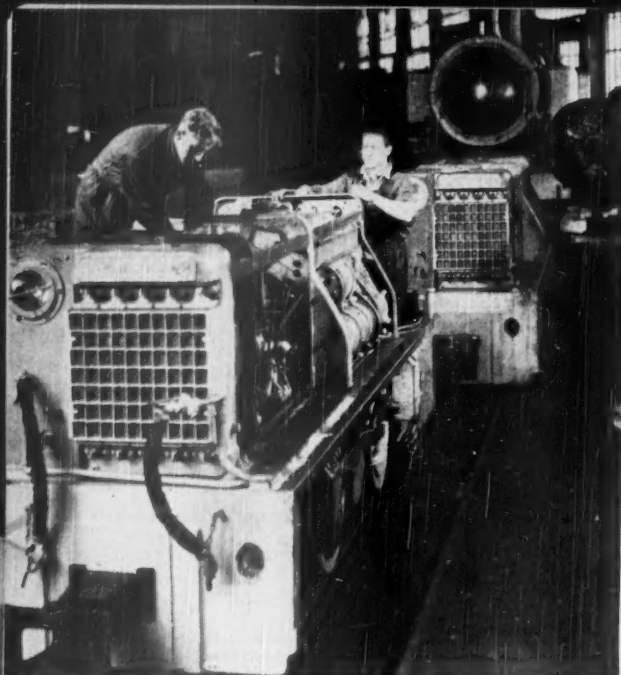
A small union got a telephone call a few days ago from the labor-relations man in a small plant which had been holding off from signing a new contract. Here's what he said:

"There might be a wage freeze, and if one comes, it will come without warning. We don't want to have a lot of employee ill-will and accusations that we stalled until a government order protected us. Will you sign a contract today for 3¢ in insurance and 7¢ in pensions?"

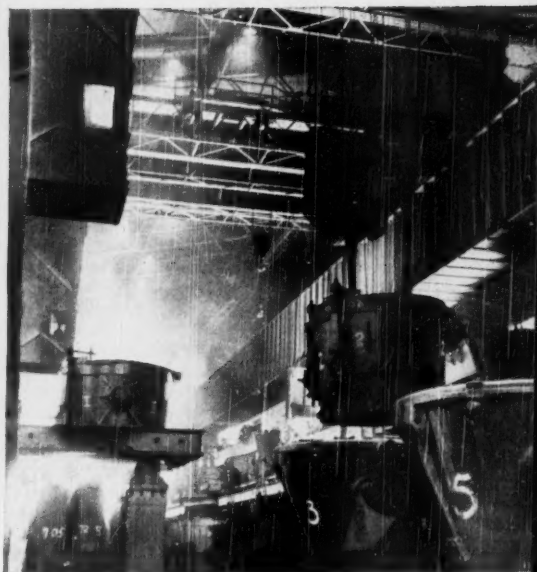
"We'll talk details later."

They closed the deal a few hours later.





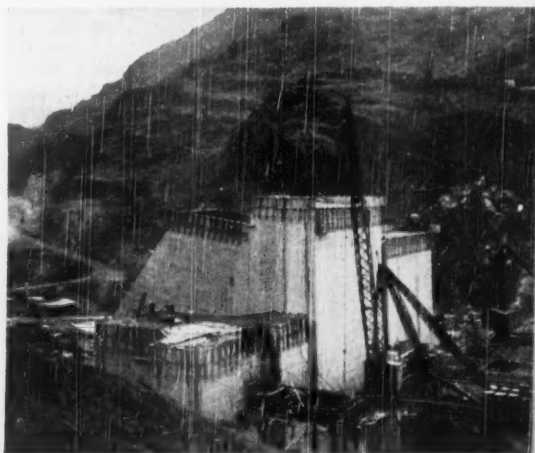
**COAL** These powerful little diesel locomotives will haul coal in Britain's mines. Some of them are for export—to replace the worn-out rolling stock in the coal pits of Europe.



**STEEL** A new melting shop at Scunthorpe, Lincolnshire, helps boost steel supply. By the end of 1950, Britain will be turning out 17-million tons of steel annually.



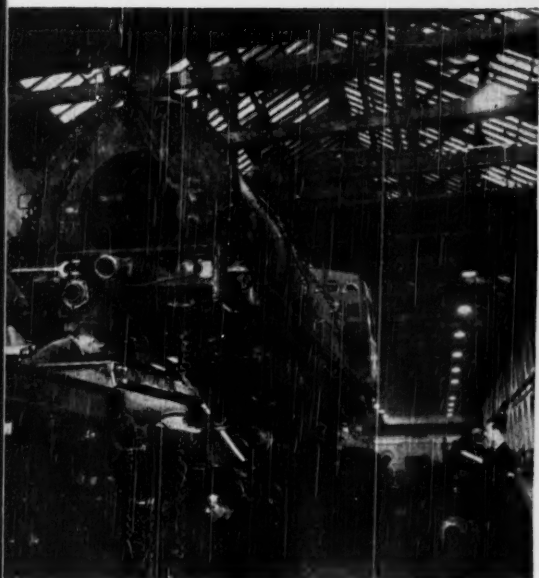
**CHEMICALS** Britain has an expansion program for its chemical industry, too. These big cooling towers are under construction at Thornton-le-Moore, Cheshire.



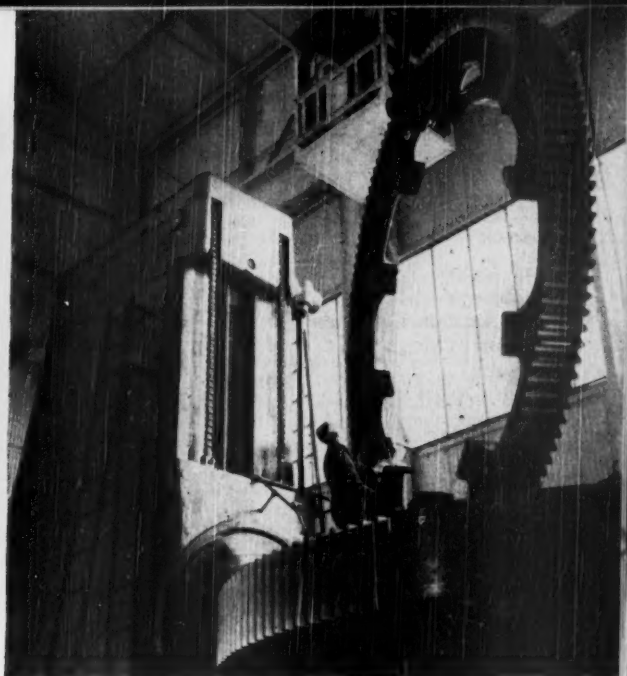
**POWER** Britain will spend \$185-million this year to boost power output. This dam, high in the mountains near Loch Lomond, will hold back 1.2-million cu. ft. of water.

## Steel and Brick For British Revival

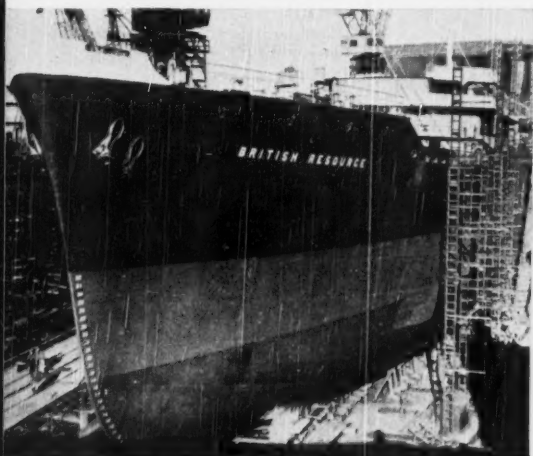




**RAILROADS** Locomotives for Britain's railways are under construction in Manchester. Scheduled for 1950 are 400 new locomotives, 3,080 coaches, 30,500 freight cars.



**PLANT MACHINERY** These huge wheels will grind sugar in Britain's largest sugar hopper. \$1.3-billion will go into British manufacturing in 1950.



**SHIPPING** Last year, Britain turned out 1.4-million gross tons of ships—a third of them for other countries. That's about half of the entire world's output of ships.



**HOUSING** In London, blocks of new apartments are nearing completion. Between 1945 and February, 1950, homes have been provided for more than a million families.

Britain is fast getting back its industrial vigor. You can see it on paper—in the increasing gold and dollar reserves in the Bank of England; and you can see it in steel and brick if you wander around the countryside.

Since the war, Britain has been pushing a big program to reequip its industry. Last year, just about \$5-billion (£1 = \$2.80) went into capital investment, and about the same amount is on

the docket for 1950. The pictures on these pages give you an idea of what Britain is getting for its money.

For example: During 1949, close to \$1.3-billion was spent to supply new plants and tools for British manufacturing industries. Some \$75-million worth of new equipment went into the coal mines. About \$1.2-billion were used to raise new housing units. And the iron and steel industry came in for \$126-

million—most of it for a new, completely integrated sheet steel and tinplate mill going up in South Wales.

Despite all this expansion, Britain has to keep a tight lid on new investment. If home industries grab too big a share of labor and key materials, the export industries are pinched. And these are busy trying to sell abroad for hard currencies. Besides, unchecked investment stirs up inflation.

## Federal Reserve Index of Industrial Production

1935-1939 = 100  
(Seasonally Adjusted)

### MANUFACTURING

Durable	Nov. 1948	May 1950*	% Change
Iron & Steel	224	225	+0.4
Machinery	276	256	-7.2
Transportation Equipment	238	248	+4.2
Nonferrous Metals	187	195	+4.3
Lumber	145	157	+8.3
Stone, Clay, & Glass	203	202	-0.5
Nondurable			
Textiles	164	175	+6.7
Leather	102	NA	NA
Manufactured Food Products	159	164	+3.1
Paper Products	169	184	+8.9
Printing & Publishing	156	169	+8.3
Petroleum & Coal Products	227	213	-6.2
Chemicals	257	255	-0.8
Rubber	203	212	+4.4

### MINERALS

Fuel	167	147	-12.0
Metals	121	121	—
Average	195	193	—

\* Preliminary. NA Not available.

## Same Index, Different Boom

FRB index is close to its 1948 peak, and still pushing. But this time, very little is going into inventory. Steel and lumber, now crowding capacity, hold down other industries.

Industrial activity is once again close to the ceiling—if it isn't there already (BW—Jul. 150, p19). One of the most closely watched gauges of our economy—the Federal Reserve Board index—says so. In May, the index was 193, just two points below the 1948 peak. In June, it probably reached 195 or beat it.

But though the index is about the same for both periods, if you look beneath the surface, you find that the 1950 boom is riding on different wheels. • **Near, But Not Quite**—One thing is clear. Even though the index stands at the same level, we aren't yet crowding as close to the limits of capacity as we were in 1948. But steel and lumber are running at the top of the graph. That fact—that they are going their limit—makes them bottlenecks for other industries.

Another point is that durable goods have shown the greatest strength. Non-durables are up too, but the hard goods made the big gains.

• **Comparison**—Here's what a comparison of the 1948 peak with the 1950 peak shows:

• A large part of production during 1948 was for inventory. By the end of the year, goods on the shelf had increased by \$7-billion to bring business inventories up to \$59-billion. The 1950 boom has been feeding on consumer demand. From the beginning of the year, stocks have risen only a little over \$1-billion, were only \$55-billion at the end of April (the latest statistics available).

• On a per capita basis, output isn't as big, comparatively, as it looks. That's because population has jumped about 4-million in the last year and a half.

Nevertheless, productivity is increasing rapidly. The manufacturing payroll tells us that. In November, 1948, there were 124-million production workers. In May, 114-million workers were producing the same output.

• Because steel and lumber are tight, they are holding the lid down on the rest of the economy. The capacity to produce is greater than it was in 1948—thanks to close to \$26-billion in new plant and equipment. Yet output

doesn't reflect that huge new capacity.

• **Change in Stress**—The difficulty of tying down the economy while someone takes its temperature is that while the thermometer is the same, someone has switched the patient. New products and processes, changing consumer preferences, cause a shift from one industry to another. Thus lumber is 8% over its 1948 peak while fuel is 12% under (see table). Or take coal: An undependable supply and high prices have helped dump bituminous coal 15% from its 1948 level; rayon production, on the other hand, increased 8%.

In the "normal" years 1935-1939, when the index read 100, iron and steel made up 11% of the total. In May, 1950, iron and steel constituted 12.8% of the total index of 193. So in that month, iron and steel swung a 16% greater influence than just before the war. Chemicals made up a little over 6% of the 1935-1939 period. Now it makes up 8%; its relative importance has thus increased by about 32%. Transportation equipment is 28% heavier in the economy than it was pre-war. And machinery, even though it's off 7% from the 1948 top, is still 33% more important than it was in 1935-1939.

But every category that now swings more weight in over-all business has supplanted an industry that used to be more important. Textiles' present representation in the index is 9% less than in the base period; printing and publishing 13% less, fuel 24% less, and metals 41% less.

• **How Accurate?**—Nobody claims that the FRB index is accurate right down to the last point. In some areas, the statistics aren't as complete as they could be; in some industries, they are unreliable. When output figures are incomplete or suspect, FRB calls on related figures—raw materials, say, or man-hours. Over 40% of the 100-plus series that go into the index are made up with man-hour data. But the raw man-hour figures don't show changes in productivity. Until recently, FRB used an average annual change of between 2% and 3%. Now it's figuring in a 5% over-all increase. But even if this were 50% too low, the index would be wrong by only 2 points.

Then, the FRB index sticks solely to manufacturing and mining; it doesn't take account of changes in the distribution end of business. So if distribution activity rises faster than production, the index would be low. And that's just what is happening. More and more workers are going from the factories to white-collar jobs and service activities. The work that they are doing counts in total business activity but doesn't show directly in the FRB index. Hence, today's total business already has passed the 1948 top.



OLD FASHIONED violent hijacking is passe. Smooth professional system makes . . .

## 1950: Hijackers' Heyday

Truck cargo thefts will reach record high this year as gangsters will lift \$50-million worth of goods. Best protection for shippers lies in using trucks with alarm systems.

At 3:30 one morning last week, driver Joe Mancuso braked his big trailer truck to a stop at a diner on the outskirts of Pittsburgh. He wanted to get his \$50,000 load of liquor to the warehouse in the city by 5 a.m., and he figured he had time for a fast cup of coffee and a doughnut. Joe also figured that he didn't have to worry about his cargo; it was securely locked up and he had the key. So he left his cab open and the motor running.

• **Hot Coffee**—Joe wasn't inside long. He likes his coffee diner-hot—just enough below the boiling point to keep it from bubbling over into the saucer. So he spent maybe a total of three-four minutes kidding the blonde counter-girl about her latest boyfriend between gulps of coffee.

That short interval was just time enough to prevent Joe from ever delivering his cargo, much less at 5 o'clock that morning. When he walked out the door, he saw that his truck had vanished.

• **Hot Cargo**—Joe knew his cargo had suddenly become "hot," that it had been hijacked. Sure enough, the cops found the truck an hour later, only a few miles from the diner. It stood off the road with the engine shut off, the keys in the ignition lock. And its cargo compartment was completely empty.

That's the pattern of the 1950-type hijacking gang. Seldom, nowadays, does a big black sedan bristling with machine

guns force a truck off a lonely road. Rarely do gangsters beat up or kill the driver and steal the truck as well as the cargo. Instead, the really professional 1950 hijacking gang, like most gangs today, is a well-oiled business operation; it substitutes speed and organization for violence.

• **On the Rise**—It seems to work. Like other crime, hijacking has been rising at an alarming rate ever since the war. In 1946, hijackers stole a little over \$20-million worth of cargo from trucks. By last year, the figure was nearly twice as high—\$40-million worth of goods lost. And in 1950, according to the Cargo Protection Bureau of New York, hijackers will take \$50-million worth of goods to set a new record.

There's little chance of recovery of most stolen cargoes; hijacking has become a scientific crime. Gangsters will heist only cargo that they can get rid of in a hurry, through a fence, at a good price. Clothing is the most desirable cargo these days. Textiles are second, liquor third, tobacco fourth. Television sets are growing in popularity. They weren't even on the list three years ago, now are running fifth. Food was sixth, and money was seventh.

• **Businessman's Fault**—Obviously, any businessman who ships any cargo by truck should guard against its theft. But Cargo Protection Bureau says that too often he doesn't. It points out that no businessman in his right mind would

dream of leaving his store, warehouse, or factory unlocked or unguarded.

Yet, complains the bureau, this same man will ship these same goods out on an unprotected truck. If the load is hijacked, he collects insurance. But each time a load is lost, up go the premiums—until they get prohibitive. And most important of all from the standpoint of his business relationships is this fact: The goods never get delivered, and you have a frustrated and angry customer.

• **Prevention**—How do you keep a cargo from being hijacked? Giving the truck driver a gun is of no help, and an armed guard is far too expensive. The cheapest and most effective weapon so far figured out is an automatic "scare-away" alarm system. With such systems, no one but the driver can move the truck without setting off a siren that can be heard for blocks. That scares away the would-be hijacker.

Such a system obviously would not be effective if hijackers still operated along lonely stretches of highway; no one who could do much would be around to interfere. But it is foolproof when the normal hijacking pattern is followed. That pattern is usually like this:

• **The Gang**—The professional hijacking gang, first of all, is so highly organized that it always knows what it is getting when it snatches a truck. It spends weeks studying routes, drivers' favorite stopping places, and times that trucks carrying a certain item come through. Just as in the early days of the West bandits knew which stagecoach the gold would be on, so the modern hijacker knows which truck will be carrying the goods he can turn into money in a hurry.

Almost invariably, the gang works only around metropolitan areas. That's because they want to steal the truck when it's as close as possible to their "drop" (warehouse).

• **The Alarm**—A really good alarm system, of course, foils this plan right at the start. But it takes a lot of doing to figure out a system that will really block all the tricks criminals can think of. Babaco Alarm Systems, Inc., one of the biggest makers of truck and auto alarms, tailors its alarms to fit each type of truck. But most work the same way. For example:

If a thief tampers with a door, breaks the windshield or another window to get into the cab, the siren starts screaming. Or if somehow he does get into the cab and starts the truck, the clutch freezes, and he can't drive away.

• **Outwitting**—Sometimes, thieves figure out new gimmicks, which Babaco in turn has to figure out. For example: Many long-haul trucks arrive at their destination in the middle of the night. Nobody's around to unload them until

morning, so the driver sets the alarm, locks everything up, goes off somewhere for a two-hour nap.

Recently, one gang made a few pretty good hauls out of such situations. It simply drove up to the terminals in its own tractor units, towed off the parked trailers. Babaco countered with a new device to stop that practice. It was a "parker" alarm, which went off if anyone but the driver tried to move the vehicle.

- **Cost**—Babaco only leases its alarm systems, never sells them. The reason: The leasing contract provides that Babaco will service the alarms at specific intervals, make sure they keep working. The charge for installation and one-year's service ranges from \$75 for a car to \$220 for the most complex system on a big truck. Servicing thereafter drops to approximately half that cost per year.

- **The Start**—The Babaco Alarm originated in 1931. A jewelry salesman named Jack Seide had two sample kits stolen from his car in one month. To protect himself, Seide made a contraption out of wires, a siren, some triggers and a special coded lock. It worked, and other salesmen and shippers heard about it. Within a short time, Seide had quit being a jewelry salesman and become a manufacturer of alarms.

## Federal Housing on Campus

Some 700 colleges will ask for \$600-million in federal loans under the housing act. With only \$300-million available, loans will be made on basis of need.

Oscar Ewing, Federal Security Administrator, would like to take colleges under his broad federal wing. He predicted last week the time is coming soon when Uncle Sam will make cash grants, especially to smaller colleges, to keep the schools from foundering.

- **No and Yes**—This somewhat tenuous invitation brought quick, tart disclaimers from the heads of some universities. But even as they were saying, "No, thanks," a group of their fellow educators were getting set for a trip to Washington. Some 700 colleges want federal help with their housing problem. All told, they want \$600-million.

They can get it, too; at least the lucky ones can. The Housing Act of 1950 makes \$300-million available to colleges in 40-year loans at an interest rate of 2.75%—for either new construction or alteration of housing. The Housing & Home Finance Agency handles the job.

Obviously, that money is not going

to take care of \$600-million wants. But it's better than it looks. The loan money will be a revolving fund. As some institutions pay up, new ones can get loans.

- **Delay**—The chief holdup on the government loans is that Congress hasn't yet appropriated the money. HHEFA will need to recruit a staff and process the applications. HHEFA doesn't look for the appropriations bill to pass until late this month or early August.

To get a loan, an institution will have to convince HHEFA that it can't get the money on comparable terms elsewhere. There'll be no first come, first serving. HHEFA is relying on the Office of Education of the Federal Security Agency to recommend applicants on the basis of need.

- **Survey**—HHEFA knows what it's in for because the American Council of Education, with a membership of some 1,000 colleges and other organizations, made a survey. The object was to find how many of the nation's 1,800 accredited senior and junior colleges planned to apply for loans and in what amounts.

Here's what the \$600-million that the 700 colleges put in for would provide: 110,000 dormitory-type rooms for single students, 9,000 units for married students, and 7,000 houses for faculty members.

- **Enrollment High**—Dr. Francis J. Brown, who supervised the study for the council, said two things were to blame for the campus housing shortage. College enrollment is up one million from its prewar figure—to 2.5 million. The second reason is that the 110,000 temporary housing units in use are mostly too ramshackle to maintain.

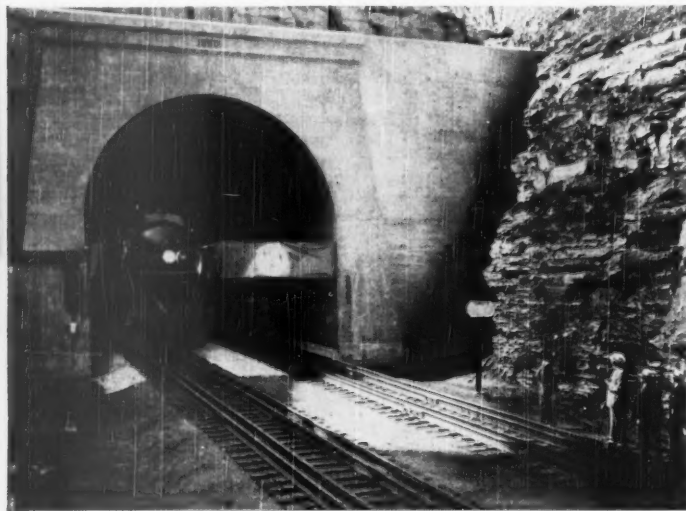
To explain the higher enrollment, Dr. Brown cites three factors:

- Some 60% of all youths of high-school age now graduate from high school; that's almost double the prewar proportion.

- Family incomes have increased; that means more families can afford to send their children to college.

- The wide use of GI training has brought a shift in attitude. A lot of people think college important who never thought so before.

Dr. Brown thinks that enrollment will stabilize at 2.5-million and stay there until the late 50's. But wait till the war babies start coming in. Around 1962, he says, they'll push enrollment up 30%.

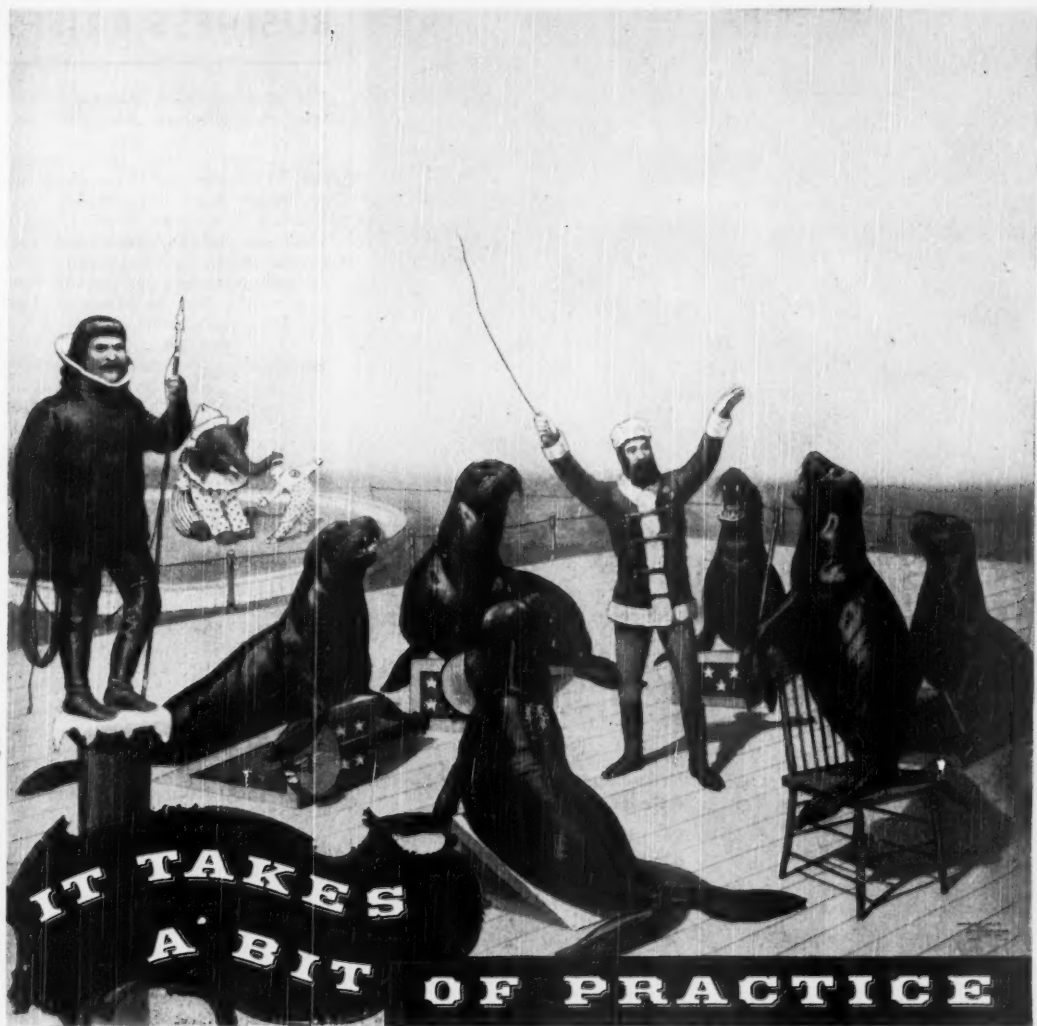


## Comin' Through the Mountain

Around the mouth they tied a red and silver ribbon. Then officials of the Norfolk & Western Ry. Co. stood by while the streamlined Powhatan Arrow broke through. That made the opening of N & W's new Elkhorn Tunnel official. The railroad says that the 7,110-ft. tunnel is the longest on

the line—and also the largest double-tracked bore in the world. It cost \$12-million to build. It's on the railroad's main line, 11 mi. west of Bluefield, W. Va. The new tunnel replaces the Old Elkhorn Tunnel (a single-tracker, built in 1888) which now is a mine. It follows a rich coal seam.





Circus Poster (1895) from the collection of Culver Service.

... months of practice, in fact, to teach a seal to sing. And even then he muffs the cadenzas. But *anyone*, after a few minutes' instruction, can add, subtract, multiply and divide with the Comptometer Adding-Calculating Machine!

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Photo Courtesy U. S. D. A.

## "Liquidating" a \$350,000,000 menace

Today American corn growers are battling increasingly to throw back a foreign invasion. For the European corn borer, first discovered in this country during World War I, has destroyed an estimated \$350,000,000 worth of field corn in addition to the huge losses of sweet corn in the past year alone. And this year—more borers than ever!

High time for all-out war! And Pennsalt chemicals are helping American growers to wage a quick, deadly counter-attack. Pennsalt helped to pioneer DDT. And now, across America, Penco® DDT Emulsion Concentrate is destroying the borer and saving the corn.

With great speed by plane in emergencies—and with fullest efficiency by ground equipment—this powerful insecticide is being sprayed over vast U. S. acres. It stops the borer caterpillars dead *before they enter the plants*—protecting this year's and next year's corn from the borer's twice-a-year cycle. Here is another example

of how Pennsalt research has served the nation.

For 100 years, famous Pennsalt products have helped to make living safer, more abundant and pleasant for all. Pennsalt chemicals are leaders in scores of industrial, agricultural and household fields: insecticides, dairy cleansers and sanitizers, water purifiers, laundry compounds, metal cleaners, corrosion-resistant cements, fluorides, acids, ammonia, chlorine, caustic soda—many others.

Almost every great American industry is served by Pennsalt products. We would like to apply our ingenuity and experience to *your* particular problem, too. Write: Pennsylvania Salt Manufacturing Company, 1000 Widener Building, Philadelphia 7, Pa.

Another Story of Progress from

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INDUSTRIAL · AGRICULTURAL · HOUSEHOLD

**PROGRESSIVE CHEMISTRY FOR A CENTURY**

## BUSINESS BRIEFS

The court approved Dumaine's Waltham reorganization plan (BW-July 1'50,p28). Trustees were ordered to take possession of the plant immediately to complete unfinished goods and get finished goods on the market.

Three new hardtop convertibles were announced by Lincoln-Mercury. Like those of other makers, they all have trick names: Mercury Monterey, Lincoln Lido, Cosmopolitan Capri.

Basing-point prices are out for Kennecott Copper. The company used to charge all customers on the basis of delivery from the Connecticut Valley, but will now charge uniform prices. Change will mean a 4¢ to 4¢-per-lb. cut for western metal users. FTC is campaigning against basing points in steel, has never taken any action on copper.

Akron can relax. Talk had it that B. F. Goodrich was planning to move its general offices. But the company squelched the rumors with announcement of plans to build \$2-million worth of new offices—at Akron.

Two truck makers have come out with new models. Federal has brought out a line of light and medium jobs, and Mack capped its 50th anniversary with a completely redesigned medium and heavy line.

Cohen, Goldman, New York clothing maker, has sold out to H. Daroff & Sons, Baltimore. The New York concern mystified the industry a few months ago with the announcement that it wanted to liquidate its holdings.

SEC says individuals saved about \$600-million during the first quarter of this year. This low savings rate, the commission says, resulted from failure of individuals who received GI insurance refunds to put them into savings. Before they were paid off, SEC had been counting equity in them as savings.

Justice is very busy. The department filed four new big antitrust suits: (1) against Auto Parts Assn. and its parts distributors members, charging them with sewing up parts supplies, dividing up the market, and fixing prices; (2) against General Outdoor Advertising Co. and a group of trade associations for monopolizing the outdoor poster business; (3) against United Engineering & Foundry charging it's in a world rolling-machine cartel; (4) against Kellogg Co., charging monopoly in sale of breakfast food to governments and institutional buyers.

# Some **DOS** and **DON'TS** for Summer Months

These are the months when fresh air, sunshine, and outdoor exercise can contribute most to good health and the enjoyment of life. To get full benefit from summertime, however, it is well to be on guard against accidents and health hazards.

Fatal accidents in the summer are about 5%

above the annual average, according to the National Safety Council. In fact, during June, July, and August there is an average of 284 accidental deaths per day. So, to help you avoid common summer hazards, here are some of the things that safety and health authorities often recommend.



**DO . . . take proper precautions** for safety in the water. Fewer than 1 out of 14 Americans who participate in water sports can be considered skilled swimmers, and even they may sometimes need assistance. So it is always best to swim only where other people are around to help if you need it. When swimming even moderate distances from shore, try to have someone in a boat accompany you.



**DO . . . learn the principles of First Aid.** There is always a chance that an accident or emergency may occur where you are. If you know how to take prompt and proper action before a doctor arrives, you will help to protect the victim, and may save his life. To do this, you may want to learn basic First Aid techniques, including artificial respiration. Your local Red Cross will be glad to help you.



**DO . . . make sure**, when you are away from home, that the water you drink is safe. Water that looks clear and tastes good may still contain disease-carrying germs. So when you are on vacation, or on week end hiking or camping trips, make sure the water is pure. If there is any doubt, you will be wise to boil it for at least five minutes.



**DON'T . . . exercise too strenuously** on week ends or during your vacation. Too strenuous exercise, especially if you are not accustomed to it, puts a heavy strain on heart and blood vessels. Some physical activity, however, is usually beneficial. Your doctor, taking into account your age and physical condition, can advise about the kind and amount of activity you may enjoy safely.



**DON'T . . . take chances** on overexposure to the sun. Starting slowly (about 10 minutes the first day) and tanning gradually may help avoid a painful or serious burn. In addition, if you stay out in the sun too long or exercise strenuously during the hottest part of the day, sunstroke or heat exhaustion may result. Getting out of the sun before you get too red or too hot is a wise safeguard.



**DON'T . . . neglect cuts, bruises, or other minor injuries.** No matter how small a wound is, germs may enter the blood stream and cause infection. Prompt First Aid should include cleaning the wound, applying a mild antiseptic and covering with a sterile bandage. This will lessen the chances of infection. If signs of infection appear, such as redness or swelling, a doctor should be consulted promptly.

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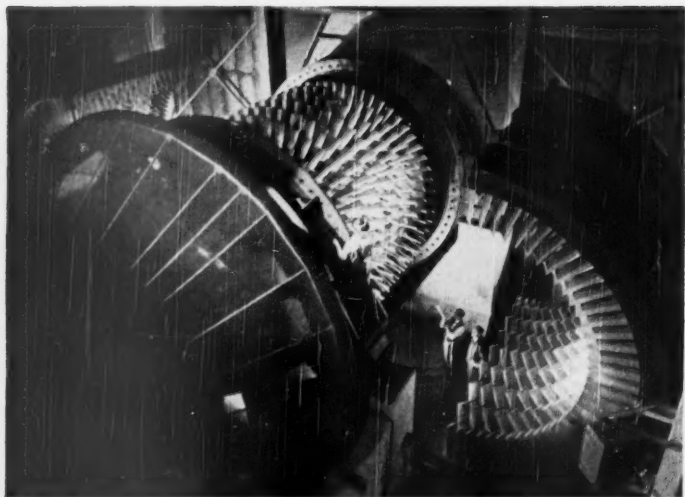
**Metropolitan Life  
Insurance Company**  
(A MUTUAL COMPANY)

1 MADISON AVENUE, NEW YORK 10, N. Y.

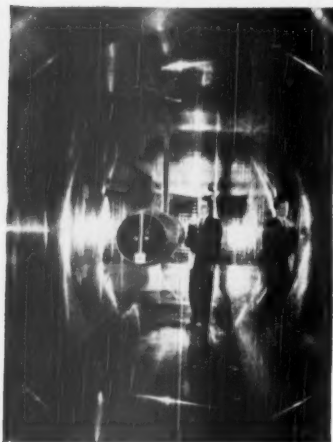


**TO EMPLOYERS:** Your employees will benefit by following these rules for a healthier summer. Metropolitan will gladly send you enlarged copies of this advertisement—suitable for use on your bulletin boards.

# PRODUCTION



AXIAL FLOW compressor at NACA's Lewis Lab has 956 blades, is powered by 87,000 hp.



A 16-IN. RAM JET in wind tunnel.



TV HELPS observe action in wind tunnel.

## Research Storehouse—for the Asking

Set up to do aeronautical research, the three NACA labs come up with answers to problems of many industries.

A storehouse of research—free to anyone who can make use of it—often goes begging, simply because industry doesn't know it's available. The storehouse is the National Advisory Committee for Aeronautics. Its three laboratories employ more than 6,000 engineers, physicists, technicians and other workers whose only task is research.

A lot of that research is confined to

aviation, but along the way, NACA people come up with the answers to many of the problems that bother all kinds of industries.

• **Turbines**—Take gas turbines and rotary compressors. They're being used more and more by railroads, central power stations, and pipeline pumps. They are complex, present many problems to turbine engineers. Engineers at

NACA's Lewis Flight Propulsion Lab in Cleveland know the answers to a lot of those problems—and the turbine industry is welcome to them.

• **Air Compressor**—The Lewis Lab engineers spent thousands of man hours figuring out a compressor to power the lab's 6 ft. by 8 ft. supersonic wind tunnel. Their axial-flow compressor drives air through the tunnel at twice the speed of sound. To do this, a seven-stage compressor handles 2-million cu. ft., or almost 75 tons, of air a minute. Three motors totaling 87,000 hp. spin the compressor's rotor at 800 r.p.m. to boost the air up to required speed.

• **Fuel**—The operating economy of an axial-flow compressor is fairly simple. The economy of a fuel-fed gas turbine is something else. But NACA's research knowhow uncovered ways to pare operating costs. And that knowhow is set down in technical reports, covering the turbine itself, combustion, fuels, and materials.

• **Materials**—Materials are still another nightmare to the turbine engineer. Inside the turbine, the metal blades rotate at cherry-red temperatures created by fuel combustion. Few alloys can stand up under such a blast. So NACA is developing ceremals—a combination of metals and ceramics—to do the job. Ceremals can run white-hot one second and stone-cold the next without cracking or warping.

• **Alloys**—If ceremals can't be used, then the next best thing is metal alloys. But alloys are only good up to a few degrees below their melting temperature. So NACA is working out cooling methods that keep alloys down to safe operating temperatures. And internal cooling of a turbine blade means that its alloy calls for less strategic materials like cobalt. Industry has long been concerned with such problems—and NACA will some day come up with the answers.

• **Research Facilities**—NACA facilities at each of its three laboratories are a research engineer's dream. The last word in equipment can be found in the laboratories—and if it isn't there already, it's on order.

An example: At Lewis Lab, 207 machine tools—none of them more than 10 years old—are put through their paces by more than 200 skilled metal-working craftsmen to turn out the turbine blades and other metal parts the engineers need.

• **Three Labs**—Lewis Lab delves into all the problems of aircraft propulsion. That includes the special supersonic aerodynamic problems connected with high-speed propulsion—jet planes and other craft.

At Langley Aeronautical Lab near Hampton, Va., experiments on aerodynamics and hydrodynamics are carried on. In Langley's impact basin, engineers run tests on the stresses and pres-



## Wagner Transformers supply Consolidated Vultee the power to build power for peace

The Consolidated Vultee Aircraft Corporation division at Fort Worth, Texas is busily engaged in a project of tremendous importance to the security of us all—the manufacture of the gigantic B-36 Air Force plane. This far-ranging intercontinental bomber is a miracle of flying might to the average layman—a marvel of aeronautical engineering. But the supply of power behind its fabrication is well-known to many industrial plants—large and small—throughout the U. S. A.

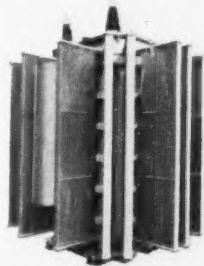
Banks of Wagner Power Transformers, like the one pictured above, supply the power at Consolidated Vultee's Fort Worth plant where this plane is manufactured. And many thousands of other Wagner Power and Distribution Transformers, of all types and sizes, supply power to industrial, commercial, urban and rural power consumers in every corner of the country.

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INDUSTRIAL BRAKES  
AUTOMOTIVE BRAKE SYSTEMS — AIR AND HYDRAULIC



# Park View

## PUTS COMFORT "FIRST"



Park View Apartments, Collingswood, N. J. Owners: Sylvester A. Lowery and Sylvester J. Lowery. Architects: J. Raymond Knopf and Samuel J. Oshiver (associate). Builders: S. J. Lowery and E. J. Frankl. Engineers: Robert E. McLoughlin, Salvatore S. Guzzardi, Robertson & Johnson. Heating Contractor: Benjamin Lesser Co., Inc. Insured by F.H.A. Financed through County Trust Co., Tarrytown, N. Y., with the Seamen's Bank for Savings of New York as permanent mortgagee.

THE \$10 million Park View development is the largest post-war apartment in the Philadelphia area; the arresting design with an almost unbroken expanse of window space has won professional acclaim; television, radio and newspaper promotions have brought thousands to the model apartment.

The owners of Park View put comfort first. They provided a "Controlled-by-the-Weather" Webster Moderator System of Steam Heating with recessed Webster Convactor Radiation.

With the Webster Moderator System, heat is delivered continuously—plenty of heat in really cold weather, mild heat for mild days. The supply of steam is varied automatically with changes in the weather. There's a Webster Radiator Valve for 100% heat shut-off

from each radiator—no dampers are needed.



Park View interior showing Webster System Radiator. Flush-with-wall, takes no useable room space. Metal front provides easy access if necessary. Convenient, quick shut-off handle.

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**MODERATOR**  
SYSTEM  
OF STEAM HEATING  
"Controlled by the weather"

tures seaplane floats and hulls can take. A wavemaker at the basin can whip up waves 3-ft. high and 60 ft. from crest to crest.

NACA's high-speed aerodynamic work is done at Ames Aeronautical Lab, at the Navy's Moffett Field. Wind tunnels at Ames test full-sized high-speed and supersonic airplanes.

• **The Task**—When it was set up by Congress in 1915, NACA's task was to "study the problems of flight with a view to their practical solution." But NACA isn't concerned with the actual design of aircraft. NACA researchers may work for months plotting the flow of air over a wing section. But they don't care if the wing ever flies. Once they add up a stack of figures on an air foil section, it's up to the aircraft manufacturer, the Air Force or Navy's Bureau of Aeronautics to see that the wing gets into the air.

NACA works hand-in-hand with industry and the military to cut down the chance of costly and needless duplication in research projects, is always ready to help when industry hits a production snag or the military a bug in flight tests.

• **Organization**—NACA is set up a lot like a corporation. A front-office board heads three technical committees which direct research of 30 subcommittees.

The committee on powerplants for aircraft tops seven subordinate groups which specialize in fuels, combustion lubrication, compressors, turbines, propulsion-systems analysis, and heat-resisting materials. The same treatment is given aerodynamics, aircraft construction, operating problems, and industry consulting.

Representatives from industry, the military, and universities serve on the subcommittees. Members outside the government serve without pay.

## Military Research Tips For U.S. Businessman

It's going to be easier for industry to get a look at the research reports—the declassified ones—of the Army, Navy, and Air Force. Before this, it was hard for a private company to dig out military research records, even when no secrecy was involved. Now integration of scientific-report activities within the Defense Dept. will simplify the job. Mastermind is the department's Research & Development Board.

• **Enter AFDO**—RDB is setting up a central collection and dissemination agency at Wright-Patterson Field, Dayton, Ohio. Its name: Armed Forces Documents Office (AFDO). Actually, it's an enlargement of CADO—Central Air Documents Office.

CADO has been in existence for

some time, first as an Air Force unit, and lately as a joint Navy-Air Force activity. The new plan adds the Army and overhauls the system.

Right now, CADO is publishing an index of classified reports and documents on military technology. These go, on a selective basis, to agencies and contractors of the Army, Navy, and Air Force. Besides the classified index, there's an unclassified publication, the Technical Data Digest; this goes to government contractors.

• **OTS, Promoter**—Under the planned setup, the Library of Congress will abstract research reports that it gets from government contractors and bureaus; then AFDO will publicize them. AFDO will turn over the abstracts on unclassified reports to the Commerce Dept.'s Office of Technical Services. Industries that aren't working for the government can get the reports from OTS. OTS will publicize the unclassifieds and act as a sales agent, either directly or through the Photoduplication Service at the Library of Congress.

## Immunity of Patents Endangered by Ruling

Chemical products or processes that up to now have been immune to patent infringement suits may be headed for choppy water.

According to the latest ruling of the Supreme Court, it's not enough any more to have a different chemical formula for a product. A majority of the court upheld a lower court's decision in ruling that a welding flux infringed the patents of a competitor even though the two products were chemically different.

The court held: "If two devices do the same work in substantially the same way, and accomplish substantially the same result, they are the same, even though they differ in name, form, or shape."

This theory, the "doctrine of equivalents," awarded victory to Linde Air Products Co.'s patented compound, "Unionmelt Grade 20," which had allegedly been infringed by Lincoln Electric Co.'s "Lincolnweld 660."

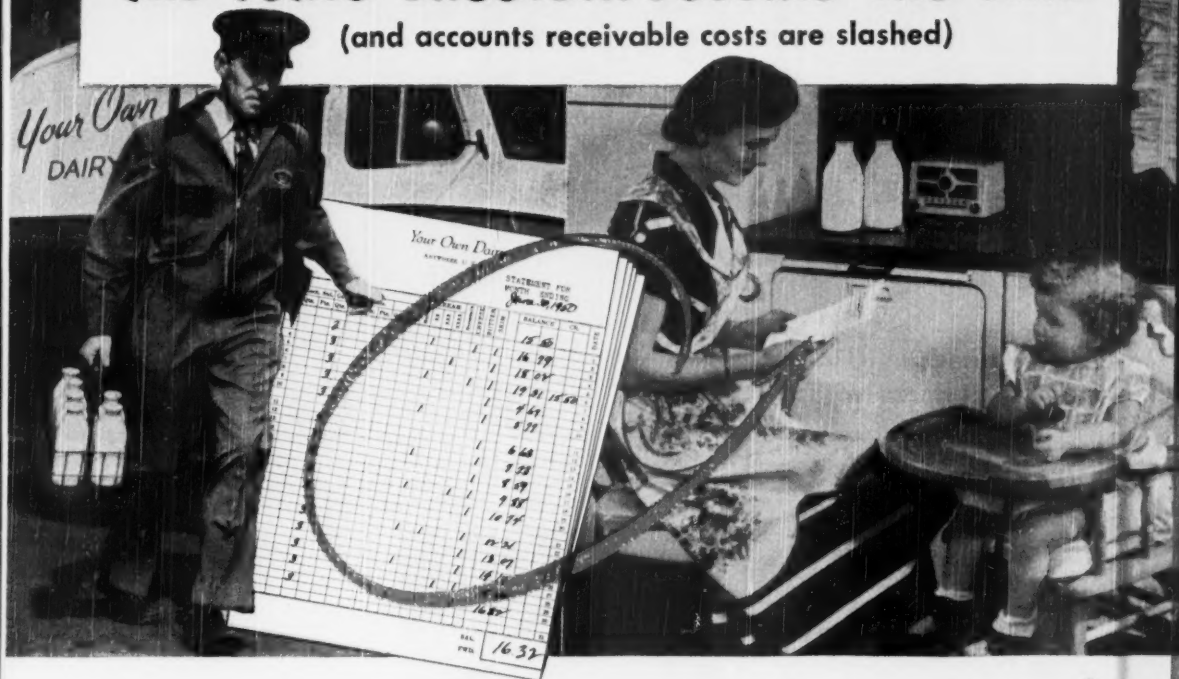
Three justices dissented. Anything not specifically claimed by a valid patent is in the public domain according to patent law, they asserted. And the Linde patent didn't specifically cover Lincolnweld's composition.

For practical purposes, said the minority, the court's ruling opens up patent claims far beyond the language of the patent. A manufacturer must be able to predict "how far a court . . . will expand the claim's language after considering the testimony of experts in the field," they said.



# His route sheets... become the bills

(and accounts receivable costs are slashed)



Illustrating just one of the ways Recordak microfilming is increasing efficiency in 65 different types of business... in thousands of concerns.



Every time the milkman stops at your door he itemizes his delivery on a customer route sheet similar to the one shown above.

At month's end... it used to be necessary for dairy billing departments to transcribe the information on route sheets to customer statements. *But no longer!*

Today, dairies using the Recordak Photographic Billing System eliminate this costly duplication of the milkman's record keeping. Their clerks simply total the route sheets... which are then microfilmed for the dairy's record... and sent out as bills.

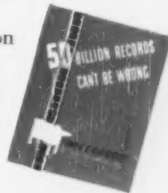
**Result:** Bills are turned out much faster... with greater accuracy... at a fraction of the former billing cost. Also, payments are received sooner... and customer good will is increased because day-by-day purchases are recalled more readily.

Regardless of your type of business—or its size

—you should investigate Recordak microfilming soon. Remember, it's being used today in 65 different types of business, thousands of concerns—to simplify accounting routines; to get greater protection; to cut filing space as much as 99%; to speed reference; to produce photographically accurate and complete records... instantaneously... for a fraction of a cent apiece.

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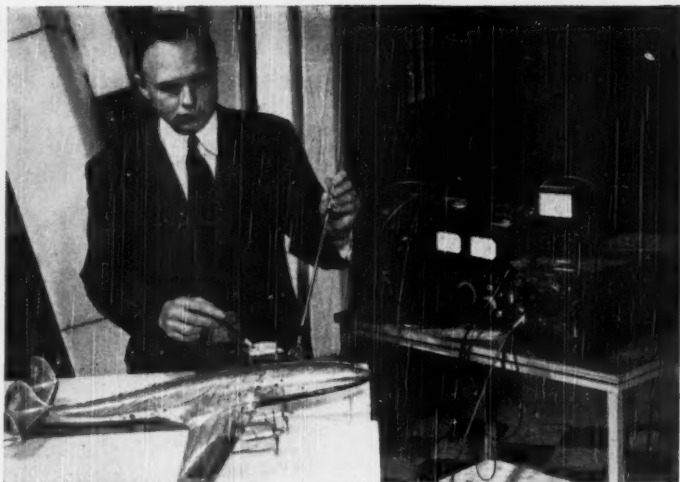
Frick Air Conditioners have the features you want: large cooling capacity, quiet operation, excellent economy, sealed refrigerating unit, variable-speed fan, self-cleaning filter, adjustable air outlets, and beautiful glazed blue-grey finish.

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Also Builders of Power Farming and Sawmill Machinery

The Hill Cafe (below) in Harrisburg, Penna., Has Used Three Frick Unit Air Conditioners Eleven Years.



ENTIRE PLANE (1/43 actual size) serves as antenna. Dr. John Granger, head of Stanford Research Institute's laboratory, studies flow of radio-frequency currents over surface of plane. Pencil marks on the model show their direction and intensity.



TINY B-29 model is studied for electrical resonance. Radiation from horn is bounced off model, produces an interference pattern.



BABY CONSTELLATION is rotated to check electrical behavior of antenna when the aircraft "flies" at various angles.

## Making A Plane Its Own Antenna

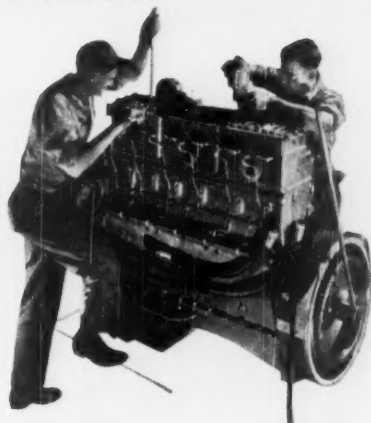
Antennas sticking out of a plane going 300 m.p.h. can use up as much as 90 hp. of the power of the engine. A typical transport with radio receivers and transmitters, a range receiver, marker beacon receiver, glide path receiver, localizer receiver, and radio altimeter has as many as 11 antennas. External antennas would cut deeply into the power and speed of the plane. When military planes get up to near-sonic speeds, external antennas may have to be impossibly heavy to buck the windstream.

That's why Stanford Research Institute, Palo Alto, Calif., is trying to figure out some practical way of doing away with them. Right now, Stanford researchers figure the best method is to use a section of the plane itself as an antenna. It can be a piece of the fuselage, the tail, or—if only one antenna is required—the entire plane.

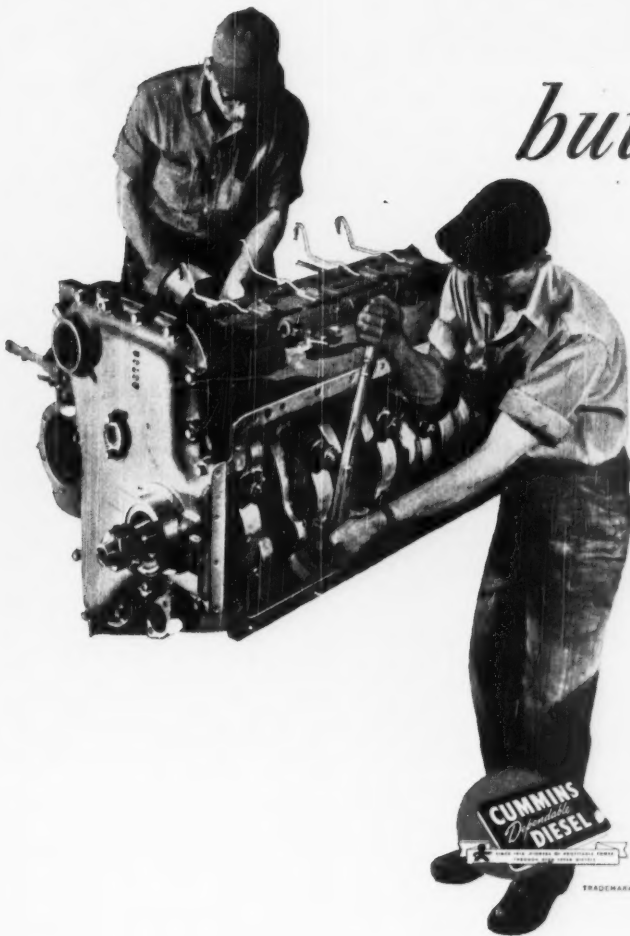
But an antenna that is a piece of the plane acts a lot differently from a conventional one under varying flight and electrical conditions. So a lot of research will have to go into the project

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*but Twice*



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before flush-mounted antennas are widely used. Right now, they are costly, so their use is pretty much restricted to military planes.

To keep costs down, Stanford researchers are using small scale models of standard planes. As long as they scale down wave lengths by the same factor as they scale planes, they get exactly the same results as they would with full-sized jobs.

## Super Engines Costly— For Gasoline Makers

Auto makers and petroleum engineers are still tossing around that old hot potato—high octane gas vs. higher compression engines.

At American Petroleum Institute's recent summer meeting, R. J. Pigott, Gulf Research & Development Corp., threw the argument back into Detroit's lap.

To increase octane numbers of gas to work with engine compression ratios of 12.5 to 1, it would cost the petroleum industry between \$2-billion and \$3-billion in capital investment, according to Pigott. And in the long run, oil producers would be stuck with excessive surpluses of residual oil. Higher octane gases call for heavier grades of crude, which, in turn, leave surpluses of residual byproducts. At the end of last year, a residual surplus of 17.8-million bbl. was already going begging on the market (BW—Nov. 5 '49, p.25). And the current reserve is up to 41-million bbl. So increased outputs of the higher octanes wouldn't help matters any.

Pigott figures that engine ratios can't go much higher than 14 to 1, but he would like to see them kept considerably below that so that they can burn lower octane fuels. This, he says, would save gasoline producers a lot of money, and wouldn't cost the auto industry too much.

## BOLT STANDARDS PUSHED

Now that engineers of America, Britain, and Canada have adopted a unified standard for thread systems (BW—Jan. 1 '49, p.38), they are trying to extend uniform standards to other bolt, nut, and screw dimensions.

There is still a great dissimilarity in the three countries among: sizes of hexagon bolt heads, sizes of square bolt heads, depth of bolt heads, diameter of round heads, dimensions on countersunk heads, relative length of threaded and unthreaded portions of bolt.

British proposals, according to The Machinist, a British technical publication, have been sent to the American Standards Assn., but they haven't been

accepted here. Indications are that proposed bolt standards will have to go through a long, slow evolution, just as thread standards did.

## SYNTHETICS FOR CARPETS

Celanese Corp. of America has two new synthetic fibers for the carpet industry. One is a crimped acetate-rayon fiber that can be used alone or in a wool blend. The other, called Celcose, is a rayon derivative developed especially for the carpet industry. Both types are due to appear in carpeting lines this summer, according to Celanese.

The company anticipates a big market for synthetics in the carpet and rug industry. That's because nylon has worked out well as a carpeting material, and besides, synthetics offer rug makers a dependable source of supply.

## PRODUCTION BRIEFS

A synthetic rubber concocted by Phillips Petroleum Co. doesn't require additions of styrene, a benzene derivative in short supply. It's made from polybutadiene and high-abrasion carbon black.

Davison Chemical Corp. is installing new equipment to produce an improved catalyst for petroleum cracking.

Diesel-electric locomotives of Baldwin Locomotive Works have gotten a healthy increase in tractive effort ratings without effecting interchangeability of parts between old and new units.

Ball bearings for jet engines now come under separate supervision at SKF Industries, Inc. A separate unit assembles, inspects, and packages the precision bearings.

Worn railroad wheels are reground without taking them off the locomotive by a machine under development at Standard Railway Equipment Mfg. Co.

1-billion cans a year is the production goal at Continental Can Co.'s new Milwaukee plant. Continental plans to run 20 production lines there.

Natural rubber consumption last month was 63,937 tons, a gain of 10.5% over April, according to the Rubber Manufacturers Assn. Synthetic hit 45,300 tons, up 19%.

An aluminum gear is bonded to a steel hub by the Al-Fin process of Fairchild Engine & Airplane Corp. The gear is said to be stronger and lighter than molded resin and fiber types.

# Kimpak\* Float Packaging



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## Cuts shipping costs — reduces damage in transit!

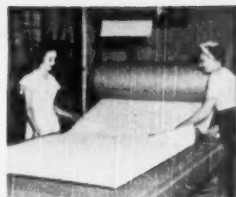
Last year, dozens of manufacturers of furniture and other products revised and streamlined their packaging operations based on facts and figures about KIMPAK\* Float Packaging. They found, through actual comparison, that KIMPAK offered more economical, more *dependable* packaging protection. And because there is a specification of KIMPAK for every cushioning need, these facts may apply to your packaging operation as well:

- KIMPAK creped wadding, in rolls or sheets, is as easy to apply as wrapping paper. It saves literally hours in the shipping room.
- KIMPAK is clean and free from damaging foreign matter; will not scratch, rub or press-mark delicate finishes. It's *pleasant* to handle.

- KIMPAK is a highly efficient cushioning material—made *especially* to absorb continuous vibration and severe shocks, defend against roughest handling. Its "springy" resiliency provides *float packaging*—the world's most effective shipping protection.

- KIMPAK is the neatest, most attractive cushioning for your product. It's fresh-looking both *before* and *after* using—completely eliminates litter and mess in unpacking.

Today, won't you investigate KIMPAK Float Packaging, and compare it with your present methods? For immediate detailed information, contact the KIMPAK distributor listed in your classified phone directory under "Packing Materials" or "Packing Materials—Shipping", or write to Kimberly-Clark Corp., Neenah, Wis.



1. Sheets of correct dimension are easily cut from rolls of KIMPAK. No waste.



2. All finished surfaces of head and foot pieces are completely protected by KIMPAK.



3. As each KIMPAK sheet is applied it is firmly attached by stapling, taping or tying.



4. Final KIMPAK-wrapped package is now ready for loading into full freight car, eliminating any further packaging protection.

*All photographs courtesy of New Orleans Furniture Manufacturing Co.*

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*to install pipe*



but **FIVE**  
*to repair it!*



When you see repair jobs in progress, where low-first-cost pipe has been installed, you get a dramatic object-lesson on the economy of using *durable* material. Original installations are quickly made by pipe-fitters. But replacements call for hours of work by as many as five crafts: pipe fitter, mason, carpenter, plasterer, painter. The first failure may wipe out initial savings in cost, a dozen times over.

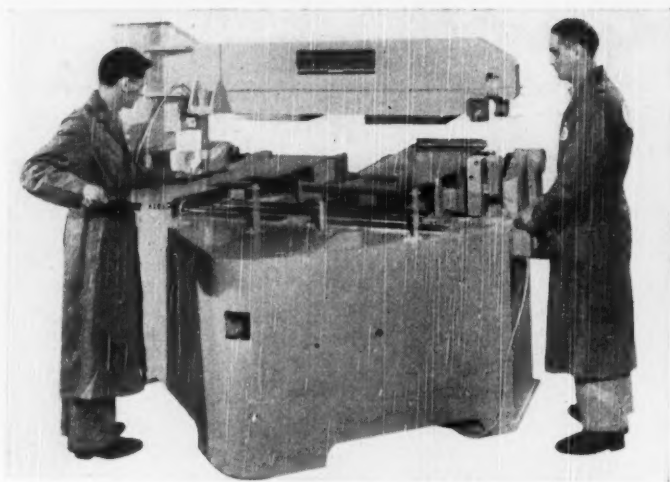
The fact that paying a little more for Byers Wrought Iron pipe means *paying a lot less for maintenance* is attested by the wrought iron pipe installations still serving in the country's older buildings, after periods of 30, 40, even 50 years.

For helpful tips on some of the many services where *Corrosion costs you More than Wrought Iron*, and the hows and whys of wrought iron's longer life, ask for "The ABC's of Wrought Iron." Write A. M. Byers Co., Clark Building, Pittsburgh, Pennsylvania



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WROUGHT  
IRON**

## NEW PRODUCTS



AN OPEN END and wrap-around operation make this bender rapid fire.

### Metal Cabinets Formed in One Swoop

With Cyril Bath Co.'s new bending machine, costs are cut, cabinets roll off at rate of 60 an hour.

Cyril Bath Co., Cleveland, Ohio, has developed a new bending machine for shaping metal cabinets that house television sets, electric ranges, and space heaters.

The bender crunches down on a sheet of metal, makes four bends, tools and punches the metal, and releases a cabinet—and all this is done in a single operation.

• **Faster Job**—The Single-Wing Tangent Bender chews up metal fast enough for two men to turn out 60 cabinets an hour. That's a lot faster than previous models operated. In old models, workmen couldn't get the material in and out of the machine fast enough, because both ends of the ram that pressed down on the metal slid in closed housings.

The new bender eliminates that bottleneck. One end of the ram is completely open at the end of each stroke, so there is space for quick loading and unloading.

• **Blank, Form, Punch**—Here's how the Single-Wing operates: The ram descends to within an inch of the bottom of its stroke. At that point, the ram catches on special latches, and both ends of the ram are jammed down with a force of 15 tons. Blanking, forming, and punching are done during this movement.

Then a bender wing reaches up and

makes the necessary bends to complete the wrap-around cabinet.

The machine is adjustable for various sizes of cabinets. Other advantages the company claims for the new bender: lower die costs and savings in secondary fabrication.

### SEALED-BEAM BICYCLE LAMP

The hazards of night bicycling are greatly reduced by a bicycle headlight that can throw a block-long beam of light.

Westinghouse, the manufacturer, claims the lamp has a 50-hour life. The headlight is of sealed-beam construction, which means that the reflector is hermetically sealed to the lens. The lens and reflector unit, with the air evacuated, enclose the filament.

Sealed-beam construction prevents dirt from tarnishing the reflector, and permits use of a larger filament. No bulbs are needed. When the filament of the lamp burns out, the unit is discarded and another plugged in.

The lamp casts a 5,000 candlepower shaft of light, and runs on either three or six flashlight batteries.

Without the handlebar mountings and battery case, the headlight will cost \$1.75 list. Westinghouse expects to have the lamp on the market by next fall.

## NEW PRODUCTS BRIEFS

A **flashtube** for use in televising motion pictures is said to have a steadier arc, longer life, and less bulb blackening. Developed by General Electric Co., Cleveland, Ohio, the tube has been tested under actual service conditions.

For **explosive atmospheres**, Weston Electrical Instrument Corp., Newark 5, N. J., has a generator-type tachometer. It's said to be safe for use in gas-, mineral-, or grain-dust-filled air.

An **ice-maker** that eliminates the air found in ordinary ice is manufactured by the York Corp., York, Pa. The de-aerated ice, turned out in fragile, quick-cooling ribbons, will not flatten carbonated beverages.

**Disposable air filters** for hot-air systems have been announced by the American Air Filter Co., Louisville, Ky. They are called Amer-glas.

**Shine on men's pants** caused by repeated pressings is minimized by the use of a new presser-cover fabric by U. S. Rubber. Made mostly of asbestos blended with cotton and nylon, Asbestall permits a freer, faster flow of steam.

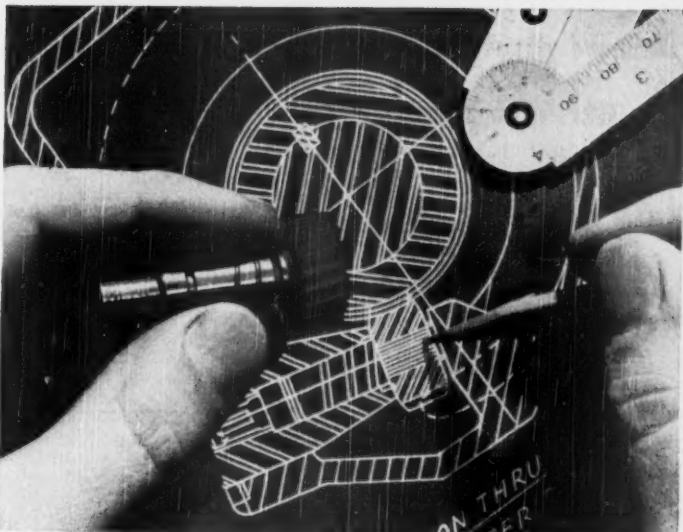
**Replaceable plowshares** are used in the new moldboard plow for Ford Tractor and Dearborn farm equipment. Cost of plowshare replacement is said to be no more than the price of resharpening a conventional plowshare. Maker: Dearborn Motors Corp., Detroit, Mich.

An **Oscillo-Tracer** enables you to draw a graph of any repetitive curve from your oscilloscope directly, without the aid of photographs. A lens projects the image to the paper for tracing. It's manufactured by Robert A. Waters, Inc., 4 Gordon St., Waltham 54, Mass.

A **fuel-oil homogenizer** called Sabanol disperses sludge and eliminates stoppages due to water in oil-burning equipment. A soot retardant and rust inhibitor as well, Sabanol is a product of the American Sand-Banum Co., New York 20, N. Y.

A **circuit breaker**, priced competitively with standard fuse boxes, is now on the market. Federal Electric Co., Newark, N. J., puts it out for industrial or home use. It's called Stab-lok.

A **self-lubricating bearing** has a sponge-iron cavity that acts as a wick. Congress Drives Division, Tann Corp., Detroit 34, supplies it in bore sizes of  $\frac{1}{2}$  in.,  $\frac{3}{4}$  in.,  $1\frac{1}{2}$  in., and 1 in.

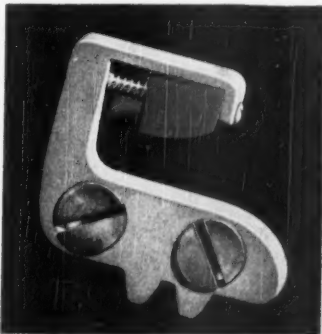


## NYLON SPEEDOMETER GEAR ON '50 FORD REGISTERS 50% CUT IN PRODUCTION COSTS

*Injection-molded to exacting tolerances in a single operation*

A five-step operation was formerly required to produce this gear to drive the Ford speedometer cable. Now, in a single operation, Ford injection-molds nylon gears, complete with tooth identification, directly on the shaft. It is estimated that use of Du Pont nylon has reduced the man-hours needed to produce this gear to one-half the former figure—a 50% saving in over-all production cost!

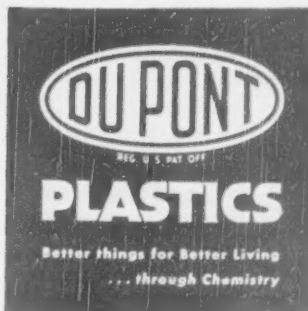
Nylon gears perform better, too.



**Nylon door-lock wedge** on 1950 Ford. Provides superior abrasion-resistance, high resistance to repeated impact of door slamming. Costs less than materials previously used. (Nylon part molded by Standard Products Co., St. Clair, Mich.)

Ford finds that closer tolerances can be held more economically. Tolerances for the nylon gear are  $\pm 0.001$ " for pitch diameter, and  $\pm 0.002$ " for O.D. Too, nylon has superior wear- and abrasion-resistance. Rugged tests equivalent to 100,000 miles of operation at 80 m.p.h. proved nylon's ability to stand up without visible wear.

Nylon's outstanding advantages are saving money and improving performance in a wide variety of industrial and commercial applications. Its properties may well help you, too. For free literature on nylon and other Du Pont plastics, write today. E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Plastics Sales Offices: 350 Fifth Avenue, New York 1, N. Y.; 7 S. Dearborn Street, Chicago 3, Ill.; 845 E. 60th Street, Los Angeles, Calif.



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name when writing.

**Indiana**  
DEPARTMENT of COMMERCE  
and PUBLIC RELATIONS  
Dept. 107/B • State House • Indianapolis, Ind.

## READERS REPORT:

### Jobs That Don't Exist

Sirs:

Your article, "Lawrence Revives—Part Way" [BW—Jun.10'50,p61], stopped me cold. It is one of the best reports I have ever read. Those of us in the textile industry who have been close to the difficult layoffs that existed during the last year know only too well that even with labor-management teamwork and unemployment compensation, jobs cannot be created that don't exist. The story of how Lawrence, Mass., coped with its critical unemployment problem is fascinating and should be an inspiration to labor and management men in other industries all over the country.

BUSINESS WEEK should also be congratulated for its "Labor Angle" column in the same issue when it says: "The employer who thinks he is isolated from what is going on at the bargaining tables in places he never heard of is nursing a fragile illusion."

MONROE B. SCHARFF

WHITE PLAINS, N. Y.

### Freeloaders

Sirs:

The vigorous punch that Fred A. Cutter swings in "Branch Plants are Freeloaders" [BW—Jun.10'50,p70] is bound to create much discussion. What he says about branch plants neglecting their civic responsibilities is undoubtedly true. But I do not think he is entirely right in putting the blame on "headquarters" and taking "Big Business" to task for it. I think this is particularly true in the case of the food company in San Leandro which he criticizes.

Mr. Cutter would be more successful in his noble venture if he would aim his guns more at the managers of the branch plants. He should consider the following points: When a man is promoted from a minor job in the Midwest to branch manager on the West Coast, he has no deep roots there to create enthusiasm for civic responsibilities such as Mr. Cutter has. Many of these branch managers are not good public speakers; and therefore, they are unlikely to stick their chins out in directions which require them "to shoot off their faces." When these branch managers seek approval of their superiors at headquarters, they are not generally enthusiastic about their requests. So how could Mr. Cutter expect the "nickel-nurse" to be any more enthusiastic.

No, I do not think the trouble here

is with headquarters. In making sales talks along this line to branch managers, I think Mr. Cutter would be more successful if he would at the same time personally send headquarters a copy of his propositions.

FREDERICK MARICH

NEW YORK, N. Y.

### Fall River Circus

Sirs:

I would like to correct the statement made in Labor Briefs [BW—Jun.17'50, p124].

The Firestone Tire & Rubber Co.'s Massachusetts plant is located at Fall River, and the Ringling Brothers, Barnum & Bailey show in honor of the company's 50th anniversary was held in Fall River.

W. S. BRANDY

INDUSTRIAL RELATIONS DIRECTOR,  
FIRESTONE RUBBER & LATEX  
PRODUCTS CO.,  
FALL RIVER, MASS.

• Despite BW's getting the circus and Firestone employees just about as far apart as possible within the Bay State's boundaries, they got together and had a great time.

### Victory or Defeat

Sirs:

Please consider the following on page 19 of the June 10th issue of BUSINESS WEEK:

Headline: A district court refused to take the "monopoly" tag off ALCOA, wants it smaller within five years.

Story: The antitrusters in Washington are more convinced than ever that they're on the right track in their drive to break up big business. They got a big boost from the district court decision handed down last week in their split-up case against Aluminum Co. of America. . . . The court handed down a long decision that looked mostly good to government lawyers and bad to Alcoa . . . etc.

Now consider how the same story looks in another magazine.

Headline: Trust-Busters Beaten

Story: Last week, the government received a setback in the last stage of its 13-year-old antitrust battle to force the Aluminum Co. of America to break up its vast industrial empire.

In a 180-page decision, Federal Judge John C. Knox refused to slice up Alcoa's physical properties; drove the shaft of defeat even deeper by rejecting two government-proposed alternative divestiture plans because they

failed to iron out the problem of how best to throw the aluminum industry into competition.

What's going on here? Is it too confusing to read more than one magazine?

WILLIAM K. HARRIMAN

GEARE-MARSTON, INC.,  
PHILADELPHIA, PA.

• Alcoa initiated this court action. What it particularly wanted was to get out from under the onus of the "monopoly" label given the company by a court back in 1944.

Government attorneys were not pressing for split-up of Alcoa—and probably would have let the situation ride. But with Alcoa pressing for a decision that it was no longer a monopoly, the government attorneys counterattacked.

The judge refused to say that Alcoa was no longer a monopoly.

Furthermore, he ordered stockholders in Alcoa to get rid of their stock in the company's Canadian subsidiary. He would not say what Alcoa wanted said—that there was now effective competition in the aluminum industry. And he said he would keep jurisdiction of the whole situation for another five years—to see whether things would be any different by 1955.

On the other side of the score card, here's what Alcoa won:

It was given title to the government plant at Massena, N. Y.—a property which it was already occupying by terms of a government sale. At the same time, it was not split up.

In view of all this, it seems to us that it is hard to make out a case that this was a defeat for the government or a victory for the company. You might argue, perhaps, that this is a standoff—although on balance, we don't view it so.

## Fixing Colors

Sirs:

We wish to thank you for mentioning our name in connection with a British-developed dyeing process in your item, "Metal Fixes Color" (BW—May 27 '50, p42).

We believe there are two corrections: Our correct address is 40 Wall St., New York, not Newark, N. J., as listed.

Our announcement made in 1947 referred to the process developed by Standfast Dyers, Ltd. We have had no share in this development other than producing Cerrobend, the low temperature melting metal used in the process.

An item of interest, we believe, to your readers would be the production rate for this process. It is in excess of 100 yd. per minute.

O. J. SEEDS

CERRO DE PASCO COPPER CORP.,  
NEW YORK, N. Y.

# Where have you seen this man before?



You've seen him in a Pullman car, for he's a traveling salesman. Eleven months of the year he goes Pullman on business.

But now he has no urgent appointment to keep, no paper work to do en route, no business problems that require

his complete and private attention. He's on vacation.

And when he travels for pleasure (as when he travels for business), he goes Pullman.

There's a tip for your vacation trip:

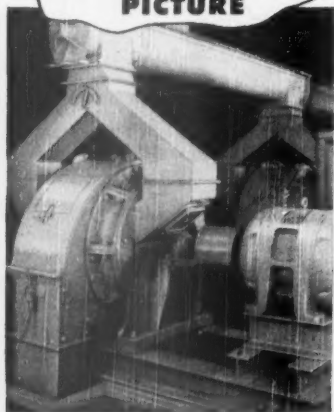
*and a pleasure*  
**It's good business<sup>^</sup> to GO PULLMAN**  
**COMFORTABLE, DEPENDABLE, AND—ABOVE ALL—SAFE!**



© 1950, THE PULLMAN COMPANY



**PRATER  
IN THE  
RALSTON PURINA  
PICTURE**



*Prater Dual-Screen Pulverizers in the Soybean Extraction Plant of Ralston Purina Company, Bloomington, Illinois.*

Because their traditional standards of quality demand a fine, granular, flour-free product... Ralston Purina use Prater Dual-Screen Pulverizers to grind their soybean meal.

This employment of Prater equipment confirms the choice of leading engineers who carry Prater Pulverizers as standard on their flow sheets for the processing of soybeans and other oil-bearing seeds.

For this reason—plus the factors of fine granulation, uniform production, and dependable performance—Prater Dual-Screen Pulverizers are used by the majority of solvent extraction soybean plants. For further details, write...

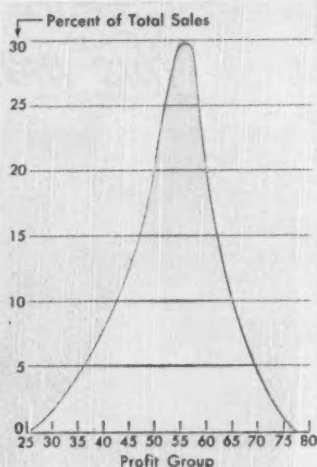
**PRATER PULVERIZER COMPANY**  
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CHICAGO 50, ILL.

Ask for illustrated book—"THE PRATER dual-screen PULVERIZER in the PROCESS industries."

**GOT A PROCESS  
PROBLEM?  
PUT IT UP TO  
PRATER!**

**PRATER  
PULVERIZERS**

# MARKETING



**STANDARD:** This curve represents a satisfactory profit-producing "sales mixture" for one multiple-product manufacturer. It's based on past experience. Products are grouped according to the percent of the sales price which is direct profit. In other words, products in Profit Group 25 produce a direct profit of 25%; those in Profit Group 40 produce a direct profit of 40%, etc. The curve shows that the bulk of sales is in products that produce about 55% direct profit.



**BAD MONTH:** This month, the manufacture sold too much in lines that return a low direct profit, not enough in high direct-profit lines. For example, Profit Group 35 (all products returning an average direct profit of 35%) accounted for 8.7% of total sales. Profit Group 70, which returns a direct profit of 70%, accounted for a mere 0.2% of sales. The month's curve is skewed to the left—and, although total sales may be high, profits will probably fall below standards.

## How to Get a Better Sales

Chart system tells a multiple-product manufacturer what products to stress to get the most profits from his output.

When old sales executives die, they go to a happy hunting ground where there's just one product to sell. The product costs almost nothing to make. But it sells at fabulous prices because the demand for it is insatiable.

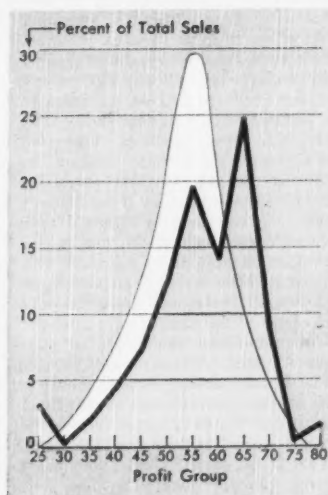
In the real world, however, the sales executive is more likely to have to sell a lot of different products—each with a different profit margin and varying demand. Figuring out how to turn the maximum profit from a hundred—or several thousand—products is a problem that often hastens sales chiefs on their trip to the Great Beyond.

• **New Tool**—The "sales mixture charts" above represent a new tool for dealing

with the profit problem. They were devised by Raymond Villers, a Columbia University professor, and partner in the New York firm of Rautenstrauch & Villers, consulting engineers. The firm has tested the charts (on which copyright is reserved by Rautenstrauch and Villers) in its business during the past two years; they make their public debut in September in a book called *Budgetary Controls*, by Walter Rautenstrauch and Raymond Villers. (*Budgetary Controls* is published by Funk & Wagnalls, 153 East 24th Street, New York; price \$5.)

The main purpose of the sales mixture chart is to show a multiple-product





**GOOD MONTH:** The manufacturer managed to skew his sales curve far to the right this month. That means that the bulk of his sales were made in lines returning a high direct profit. For example, Profit Group 65, which returns an average direct profit of 65%, took up 24.9% of his total sales. And Profit Group 70, which accounted for only 0.2% of the preceding month's sales, was good for 9.1% of sales this month. That means that the overall profit picture will be probably better than usual.

## Mixture

manufacturer when the composition of his sales is unsatisfactory from a profit standpoint—and to show him what he should do about it.

• **First, Make Your Chart**—Here's how to set up a sales mixture chart: First, you divide your products into groups, according to the amount of "direct profit" they contribute. Villers and Rautenstrauch define direct profit as the difference between the sales price of an item and the direct costs of producing it—that is, the costs that can be assigned directly to the item and that would not be incurred if the item were not manufactured. In general, the direct costs include labor and materials; they exclude such overhead expenses as rent, factory maintenance, interest on debts, etc.

Profit Group 35, say, will include all

## Shut The Window On Heat, Dirt, Noise--



## With A New Frigidaire Window Air Conditioner!

Right at your window sill, even the hottest, dustiest weather changes to cool, clean comfort—when you have a new Frigidaire Window Air Conditioner.

You'll be surprised to learn how quickly and easily you can have this compact window model in any room of your home—or your office. It cools, filters, dehumidifies, circulates air—adding fresh air in amount you select. You'll like its smart Raymond Loewy styling and the quiet, fast-cooling action of its amazingly thrifty Meter-Miser. Same refrigerating unit used in Frigidaire Refrigerators, the Meter-Miser is warranted for 5 years.



Look for your Frigidaire Dealer's name in the Yellow Pages of your phone book. Or write Frigidaire Division of General Motors, Dayton 1, O. In Canada, Leaside 12, Ont.

For summer comfort in general offices, stores, showrooms, factories, the answer is this larger Frigidaire Self-Contained Air Conditioner. It's compact, quickly installed singly or in multiple. Ideal for homes, connected to a furnace or installed independently. 3 and 5 ton capacities.



## You Can't Match A FRIGIDAIRE



Frigidaire also makes large-capacity central system air conditioners.

# Eyes RIGHT for your RIGHT Pyrenes!

Buy them the reliable, prompt, economical,  
easy way—from your local Pyrene jobber

There's one best extinguisher to guard any fire hazard. Call on your local Pyrene® jobber for the right Pyrenes for your hazards. Pyrene makes extinguishers for every fire hazard; jobbers carry various types in stock. That means you get immediate delivery, pay no freight, charges from the factory. One invoice handles everything. And you deal with an established business right in your community.

New stainless steel extinguishers have been added to the seamless copper shell extinguishers in the Pyrene line. Now more than ever, it pays you to **standardize** on Pyrene—for precision workmanship, real dependability, greatest dollar value. Write for name of your local Pyrene jobber.

TM. Reg. U.S. Pat. Off.



**CARTRIDGE-OPERATED**

New stainless steel shell—new low price. No annual recharging; no acid dangers. For fires in wood, paper, textiles. 2½ gal. size.



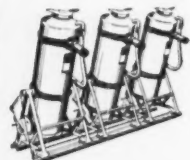
**VAPORIZING LIQUID**

The all-purpose extinguisher effective on almost every kind of fire. Safe on electrical fires, too. 1 qt. and 1½ qt. pump types; 2 qt. and 1 gal. pressure-operated types.



**AIR FOAM**

Couple playpipe to hose line. Every 19 gal. of water and 1 gal. of PYRENE Foam Compound yield 350 gals. of foam! For flammable liquids and ordinary combustibles.



**MANUAL AND AUTOMATIC SYSTEMS**

Complete fire-fighting systems, using chemical foam or air foam. For storage tanks, dip tanks, loading racks, etc.

ALSO CHEMICAL FOAM, SODA-ACID, PUMP TANK AND OTHER EXTINGUISHERS



**PYRENE MANUFACTURING COMPANY**

577 Belmont Avenue Newark 8, New Jersey

Affiliated with C-O-Two Fire Equipment Co.

the manufacturer's products that return an average direct profit of 35¢ on each dollar of sales. Profit Group 60 will cover items that return 60¢ of direct profit on each dollar of sales.

• **Percent of Total**—Once you've divided your products into direct-profit groups, you plot them on a chart according to the percentage of your total dollar sales which each group produces. This gives you a picture of your sales mixture. By analyzing the sales mixture charts for periods when you turn a satisfactory profit, you can draw a standard sales mixture curve—such as the one in the first chart on page 42. (The curve will, of course, differ for each manufacturer, and not all curves will have the nice bell shape of the sample.)

• **Compare**—Once you've set up your standard sales mixture curve, you're ready to start making comparisons. As each month's sales roll in, you plot them against the standard curve. When the curve is skewed to the left of the standard (as in the second chart), your profit picture probably won't be too rosy. And when the curve gets skewed over onto the high-direct-profit side of the chart, your profits will probably be better than usual.

• **No Substitute**—Villers and Rautenstrauch emphasize that the sales mixture chart is no substitute for ordinary quantity controls on sales. Total volume will always be important. If your total sales fall too low, you're not going to make a profit no matter how far to the right your curve may be skewed. And conversely, an abnormally high total sales volume can produce a good profit, even though the sales mixture may be skewed to the left of the standard curve.

• **Qualitative Control**—But Villers and Rautenstrauch think that their system has numerous uses. As a qualitative control, it can be used to compare the companywide sales effort for one period against another. Or the company's sales districts can be compared, one against the other, for the same period. So can the sales records of individual salesmen.

Many companies, for example, sell a competitively priced line of staple goods which doesn't provide very fat profit margins. This line is used more as a come-on to attract customers to the higher-profit lines than as a profit-maker itself. A manufacturer might have two salesmen who sold \$10,000 worth of goods during the same months; but if one's sales are concentrated in the low-profit lines, his profit contribution may be less than half that of the salesman who plugged the high-profit lines. And since the high-profit items are probably harder to sell than the come-ons, salesman number two has done more for the company—and deserves a bigger bonus—than salesman number one.

• **Variations**—Or try this: Chart one group of customers against another

group. You may find that your profits come from one group, your headaches from the other.

Analysis of low-profit sales in the light of the sales mixture curve told one company this: The unprofitable come-on items, in which the company had a great part of its volume, didn't convert those buyers into customers for the more profitable lines; the high-profit goods were bought by a different group of customers almost entirely.

• **Other Uses**—The sales mixture curve can show you just where your product mix needs beefing up. Slipping a new product in the right profit group might do the trick. Or a change in pricing policy might produce a more profitable mixture.

Sales forecasting is another field for the sales mixture chart. Once you've made your predictions of what you're going to sell in a coming period, you can chart them to see how profitable those sales will be.

## Better Business Bureau Checks TV Gripes

Never has New York's Better Business Bureau had so many complaints about one commodity. During the first five months of the year, it received no less than 1,263 complaints from people who said they had been misled or misled in buying television sets.

• **Mass Meeting**—So last week, the New York bureau kicked off a campaign to end the abuses. It held a mass meeting in Manhattan, invited more than 1,000 dealers and TV service companies in the metropolitan area.

• **Whose Fault?**—Says Hugh R. Jackson, president of the New York bureau: "A lot of people are getting in on the golden bonanza of TV through exaggerated claims."

Dealers, for example, use "bait" advertising. That's when they advertise sets for \$99.50 to lure you in the store; when you get there you find just one beat-up old model for \$99.50.

BBB also criticizes some manufacturers for making exaggerated claims about the effectiveness of built-in antennas. And it has a thick stack of letters to show that service companies are guilty of widespread deception and sloppy and inadequate service on TV sets.

• **Consumer Education**—Another prong of the New York bureau's campaign is an education drive aimed at consumers. It has prepared an inexpensive booklet (10¢ for single copies) telling "things you should know about the purchase and servicing of TV sets." This brochure, BBB hopes, will help buyers use greater intelligence in picking TV sets.

# Change to Koppers Polystyrene for a **DOUBLE** **REDUCTION** in costs



**LOWER MATERIAL COSTS.** Look at your product through the eyes of a cost accountant. Could it be made at lower cost if all or part were made of Koppers Perfected Polystyrene?

Plastics will usually cut costs over other materials . . . and Polystyrene is the lowest in cost of all thermoplastics.

**LOWER MOLDING COSTS.** All types of Koppers Polystyrene are now available externally lubricated to meet all of your intricate molding requirements. These types are designated as Koppers 31, 71, and 81 respectively. You will get an unusually fast molding cycle, better moldability and easy release from the mold by using any one of these Koppers Polystyrenes . . . and these advantages will result in lower molding costs.

### Koppers Engineering Service

Koppers staff of technical experts is thoroughly experienced in practical molding problems. These men can help you improve your molding process to obtain a better molding cycle. A call on the phone will quickly bring a Koppers "trouble shooter" to your assistance—without obligation.

### KOPPERS COMPANY, INC.

Chemical Division Pittsburgh 19, Pa.

Regional offices: New York, Boston, Philadelphia, Chicago, Detroit and Los Angeles

#### SUPERIOR ADVANTAGES OF KOPPERS POLYSTYRENE

Excellent dimensional stability

Excellent electrical properties

Good heat resistance—  
200° F. for Type 8

Good chemical and moisture  
resistance

Tasteless and odorless

Unlimited color range

Light weight gives more  
pieces per pound

**KOPPERS**

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*Perfected*  
**Plastics**

Koppers Company, Inc.  
Chemical Division, Dept. BW-7  
Pittsburgh 19, Pa.

Please send your booklet on Koppers 1950 Polystyrenes.

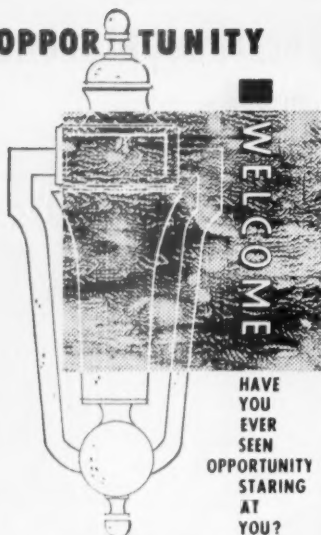
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Company.....

Address.....

City..... State.....

## OPPORTUNITY



### ... IT'S HERE—IN NEBRASKA

Here at the cross-roads of America there are villages, towns and cities with varying quotas of available labor—labor unqualifiedly hailed as the most productive in this country.

What has happened? Why is the great state of waving grain, tall corn and cattle-dotted prairies talking about INDUSTRY?

Because the sweep of farm mechanization, enabling one person to do work formerly done by three, is creating a situation wherein these farm-skilled people have to find other work—either here or elsewhere. They're smart, resourceful, quickly adaptable to any trade or skill—and they're home folks. We want them to stay here. That's why we've got the welcome mat out to industry—and why this mat also spells—OPPORTUNITY—to far-seeing industrialists who realize the value of:

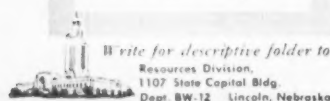
- good, honest American labor
- unlimited water
- low power rates
- low taxes (no state income or nuisance taxes and no state indebtedness)
- excellent transportation (rail, highway, air and water).

This message is from a division of state government. Our function is to help YOU get established in Nebraska. We know where there are buildings, building sites, quantities of available labor and other factors to fit your requirements. You can count on our cooperation and our discretion. Upon request we shall be glad to mail you a folder, enlarging upon this and other points. We shall also be glad to answer in confidence any specific question you may want to ask.



### DO YOU KNOW

that one of the nation's leading manufacturers of macaroni products has thrived in the healthy industrial atmosphere of Nebraska for many years? Your manufacturing operation is invited to share these favorable conditions, present in Nebraska—the strategic heart of this island empire.



**Neighboring NEBRASKA**

## Matson Has a Rival

A new steamship line, Pacific Transport, is going after the general cargo business to and from Hawaii.

Since 1931, powerful Matson Navigation Co. has had the rich sugar, pineapple, and general cargo trade between the Pacific Coast and Hawaii all to itself. Last week, Matson got a competitor: Pacific Transport Lines, Inc., San Francisco's newest steamship company.

Richard A. McLaren, Pacific Transport president and a veteran of San Francisco shipping, announced that his small but apparently fearless line will invade Matson's territory. In late July, Pacific Transport is going to inaugurate monthly service between Hawaii ports and California ports as an extension of its present transpacific service to

Japan, China, and the Philippines.

• **General Cargo**—By adding Honolulu as a port of call, the line hopes (1) to cut into Matson's Hawaii trade with the mainland and (2) to slice off a piece of the commerce moving between Hawaii and the Orient, which is served only sporadically at present.

Pacific Transport will confine its efforts to general cargo. The main reason is Matson's stranglehold on the bulk sugar business through its "Big Five" stockholders. Nor is McLaren interested in going after any of Matson's passenger business. He figures that the line's present fleet of five freighters (four of them modern 18-knot C3s) will be well able to take care of the new business.

• **Troubles**—Behind PT's move lie the troubles churning up the Orient.

The line was organized in 1946 by a group of California backers. Chief among them is Paul I. Fagan, California and Hawaii businessman and owner of the San Francisco Seals baseball club.

When the line went into business,



## East or West, Wild Bill's the Name

Avon Periodicals, Inc., got a surprise last week. The New York publishing house found that a West Coast company called Delira Corp. is planning to resurrect and promote (to the tune of \$5-million) an old Wild West hero named Wild Bill Hickok (BW—Jun. 24 '50, p. 58).

Avon's surprise was due to the fact that it had done its own resurrecting of Wild Bill Hickok more than a year ago—via a comic book. In the time that Avon's long-haired Hickok has been riding the range, more than 1.5-million copies have been sold at 10¢ each. Furthermore, Avon has a new issue of

400,000 copies due on the newsstands in two weeks.

• **Scouting**—Delira and Avon haven't talked the matter over yet. Lawyers on both sides are scouting for a workable way out of the situation. Tentatively, Delira thinks it will go ahead with plans for its own Wild Bill Hickok comic book. Hickok's name, they say, is in the public domain; and Hickok will be drawn to look like Guy Madison, screen star who will play the part in Delira's promotions. Delira reports further that Fawcett Publications has already approached it about a Wild Bill Hickok comic book.



steamship circles assumed that it would move into Hawaiian trade immediately. But it didn't. It entered the transpacific trade instead—and then, along with other lines doing business in the Orient, found the going rough. Last fall, it petitioned the government for an operating subsidy on the route presently served by the subsidized American President Lines.

• **Deal?**—While the Maritime Board considered the case, however, Pacific Transport began looking around for new sources of cargo to fill out the empty spaces in its holds. Thus its decision to move into Hawaii.

Doubting Thomases quickly smelled a "deal"—or thought they did—between Pacific Transport and Matson. They pointed out that Fagan was a Matson director until last fall, and still owns or controls a sizable block of Matson stock. They also recalled that Pacific Transport ships have lifted cargo in Hawaii, at Matson's invitation, to help out during the peak of the sugar movement season.

• **Tough Competition**—Any suggestion of a deal was promptly denied by Pacific Transport. In fact, McLaren even goes further than that:

"Our entry into the trade should give competition a shot in the arm by offering a selection of steamship services," he says. "We believe the Islands will welcome this new service. We intend to give Matson the toughest kind of competition, but we hope it won't degenerate into a dog fight or a rate war. It won't as far as we're concerned."

## MARKETING BRIEFS

**Alcoholic spending** was off last year, says the Dept. of Commerce. Total outlay for alcoholic beverages was down to \$8.6-billion—\$250-million below 1948's all-time peak.

**Emerson** will raise TV set prices this fall, says Benjamin Abrams, president of the company. Lowered prices on the new line, just introduced last week, are aimed at offsetting the summer slump in TV sales. Once summer and the slump pass, Emerson's prices will go back up, says Abrams.

**Bond Clothes** is now going to franchise stores other than its own to carry the Bond line of men's clothing.

**Packaged holiday** in Philadelphia over the Fourth of July weekend is bringing in a flood of business for the seven hotels in the plan. More than 1,200 out-of-towners have signed up for the four-day jaunt. For as low as \$29.30 each, they get hotel reservations, meals, entertainment.



**"Complete stocks" ...  
...that's only one of the things  
we mean by Service Plus!**

● Many of our customers think of United States Steel Supply as the "department store" of the steel industry. That's exactly what we aim to be . . . a source of supply that always has a large diversified stock of steel, aluminum, tools, equipment and machinery on hand so that customers' orders can be filled promptly. Customers who have shopped around come back to us with comments like these: "Only place we could find what we wanted." "We were hunting an odd size . . . you had it!" "U. S. Steel Supply was the only concern with all the stock we needed."

You can depend on us for more than complete stocks, however. *Service Plus* means quick delivery, and instant, courteous attention to any problems you have involving material selection. It means *You're the Boss* and we're going to do our best to keep you satisfied.

BARS • PLATES • FLOOR PLATE • STRUCTURALS • SHEETS • STRIP  
REINFORCING BARS • STAINLESS • ALLOY STEELS • ALUMINUM  
TOOLS • EQUIPMENT • MACHINERY

WHEN YOU DEAL  
WITH US, YOU GET  
**Service  
Plus!**

## UNITED STATES STEEL SUPPLY COMPANY

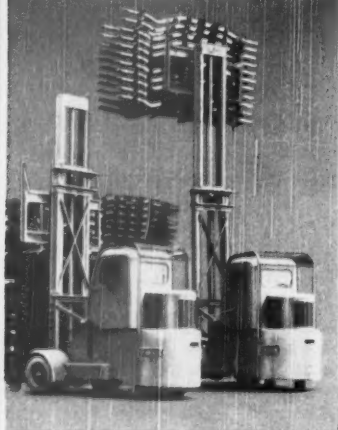


Warehouses and Sales Offices:  
BALTIMORE • BOSTON • CHICAGO • CLEVELAND • LOS ANGELES  
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SAN FRANCISCO • SEATTLE • ST. LOUIS • TWIN CITY (ST. PAUL)  
Sales Offices: KANSAS CITY, MO. • PHILADELPHIA • ROCKFORD, ILL.  
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Headquarters Offices: 208 S. La Salle St.—Chicago 4 Ill.

UNITED STATES STEEL



# ROSS FORK TRUCKS *Handle* **BIG** LOADS



**... step up plant-wide  
handling efficiency!**

One ROSS replaces four or more smaller trucks. Result? Big pay-loads . . . big man-hour savings . . . big cost reductions . . . big profit margins.

Consult ROSS — you'll benefit from 36 years' experience in mechanized mass materials-handling.

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Benton Harbor, Michigan, U. S. A.  
Direct Factory Branches and Distributors  
throughout the World



## TRAVEL



**JUNKETEERS**—Dr. Julian Miller, of Louisiana State University, and wife sip Central American drink North American style.



**HORTICULTURIST** Miller sees Inter-American Agricultural Station at Turrialba, Costa Rica, with Dr. Florence Thomas.

## Calling on Neighbors With

International House sponsors air trip through Central America for U. S. businessmen to better international relations.



**PICTURES** that amateur photographer Miller took were not just to show the people back home. This color shot of yams was for later comparison with color and texture of U. S. varieties.



PRESIDENT of Costa Rica, Otilio Ulate Blanco (left), greets Dr. Miller. Everyone on the trip met high officials in each country visited.

## Eye on Trade

TURN TO PAGE 50



TROPICAL PLANTS, some of which might thrive in southern U.S., interest Miller.



## ALL OVER THE WORLD— *Say it with FLOWERS-BY-WIRE*

The meaningful remembrance of  
FLOWERS-BY-WIRE can be speeded  
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Our 15,000 Interflora members  
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## JUNKET (Continued from page 49)



U. S. TOUCHES were always present, even in jungle (soft-drink posters). Said one of the junketeers: "I've learned two words of Spanish on this trip: O.K. and Coca-Cola."



PARTIES were a regular thing during trip. Central Americans were anxious to make a good impression on their North American visitors. They did.

## Businessmen's Junket

Last week, 47 U. S. farmers and businessmen clambered out of an airplane at New Orleans after a 17-day trip through Central America. They were loaded down with leather, sisal, and silver mementos. They also brought back some new ideas about foreign trade—and a new understanding about their neighbors down South.

The farmers and businessmen were members of a special junket sponsored by New Orleans' International House. International House is a nonprofit civic organization dedicated to improving international trade. It has picked travel as one of the quickest ways to do it.

In the past two years, International House has taken four plane-loads of important American tourists down to Latin America. It has also reversed the process, bringing three Latin American junkets to New Orleans. The idea is to show men who lead opinion, North and South, how international trade helps and how it works.

In some cases, the junkets have had practical and immediate results. On the trip just ended, a Florida cattleman took great interest in tile work that he saw while in Merida, Mexico, on the Yucatan peninsula. Before he left Merida, he had made arrangements to import Yucatan labor and knowhow to set up a tile factory back home.

American junketeers have found great interest everywhere in the President's Point 4 program. Some of the interest was catching. One midwestern businessman who had previously thought the program "a bunch of poppycock" came back convinced that Point 4 could be the making of a tremendous Central American market for his merchandise.

Along with this aura of fraternity, though, there were the usual petty misunderstandings. One American traveler complained that his shoes had been shined about five times a day—because he didn't know how to say "Go to hell" in Spanish.

# How you benefit from...



**JOB  
PROVED**

## LUBRICANTS, CUTTING OILS AND PROCESS AIDS

In your plant, large investments in machinery ride on a thin film of oil. Failure of this film means catastrophe. Perhaps, too, thousands of man hours can be wasted by an inadequate cutting oil. Or the best of raw materials can become inferior end-products because of a poor process aid. You are assured against such losses when you use Sun "Job Proved" Petroleum Products. Here's why...

After a Sun product is developed and tested in the laboratory, it must pass rigid trials in the field before it is put on the market. For Sun knows that laboratory findings can indicate nothing more than probable performance—despite the fact that Sun's research and development facilities are

among the world's finest. Analysis in the field is exhaustive and scientific. In identical equipment, under identical conditions, in regular plant operations, carefully supervised comparison tests are made with the new Sun product and the product regularly used. When these tests prove the new product's worth, then—and only then—is it given the "Job Proved" stamp of approval and offered for sale.

A Sun representative will be glad to show you case histories on the performance of "Job Proved" products *in plants like yours*. Just call or write the nearest Sun Office.

**SUN OIL COMPANY • Philadelphia 3, Pa.**  
In Canada: Sun Oil Company, Ltd., Toronto and Montreal

**SUN PETROLEUM PRODUCTS**  
"JOB PROVED" IN EVERY INDUSTRY





# Now the Sky's the Limit *when you're conveying coal*

**Bottleneck in deep mines** is the job of getting the mineral to the surface. Up to now only shallow mines have been able to employ conveyor belts for fast, safe, continuous haulage up slope entries. In deep workings, heavily loaded mine cars must be skip-hoisted, one or two at a time, up vertical shafts—an intermittent operation, often marked by accidents. But today these hoists are being outmoded by a new development of the G.T.M.—Goodyear Technical Man.

**New kind of slope belt.** Until only yesterday conveyor belts could not be used on single-flight lifts higher than 250 feet. To handle higher lifts, conventional ply belts would have to be built so thick they would become impractical, unwieldy and require huge pulleys. The G.T.M. has solved

this by building a belt with a load-carrying body of high-tensile steel cables—so strong that a single belt of ordinary thickness will now handle lifts *more than six times higher!*

**Slope mines now go deeper.** Since the introduction of this new Goodyear COMPASS Steel-Cable conveyor belt, slope mines have already been sunk to new record depths. A large Illinois coal mine recently installed a single Goodyear belt that rises to a lift of 862 feet—and still higher lifts are now on the drawing board.

**What's the limit?** The G.T.M. has worked out engineering data that proves single-flight COMPASS Steel-Cable belt lifts as high as 1,592 feet to be practical—a height nearly 28%

greater than that of the Empire State Building, world's tallest! Such a belt, 36 inches wide, will deliver 400 tons per hour at the surface, with less operation and maintenance cost than elevators of equal capacity. With such belts in series, the sky's the limit in lift.

**Want more facts?** The G.T.M. will be glad to show you dollars-and-cents-saving records on many record-breaking lifts now using Goodyear COMPASS belts. Just write Goodyear, Akron 16, Ohio.

GOODYEAR INDUSTRIAL RUBBER PRODUCTS  
-Specified  
COMPASS 750 SINGLE-FLIGHT CONVEYOR  
for slope haulage

5741' c/c  
1592' LIFT  
15° 30' ANGLE OF CLIMB

FOR HOSE, FLAT BELTS, V-BELTS, MOLDED GOODS,  
PACKING, TANK LINING built to the world's highest  
standard of quality, phone your nearest Goodyear Industrial  
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uphill!

Copyright—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

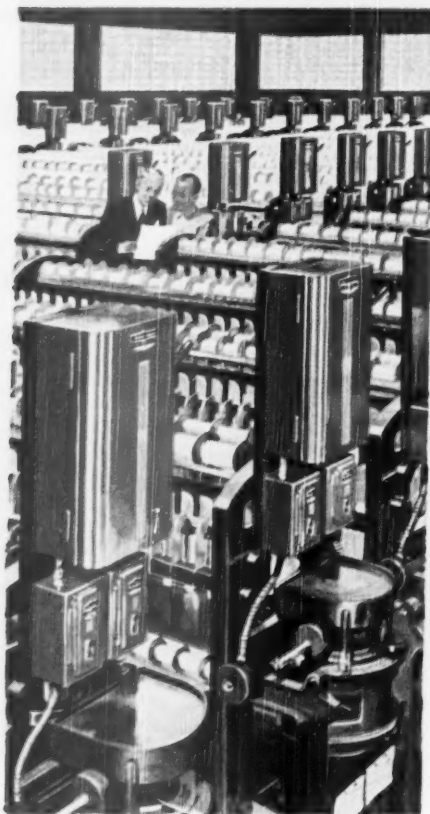
**GOOD  YEAR**

THE GREATEST NAME IN RUBBER

# Industry's Three Winning Numbers

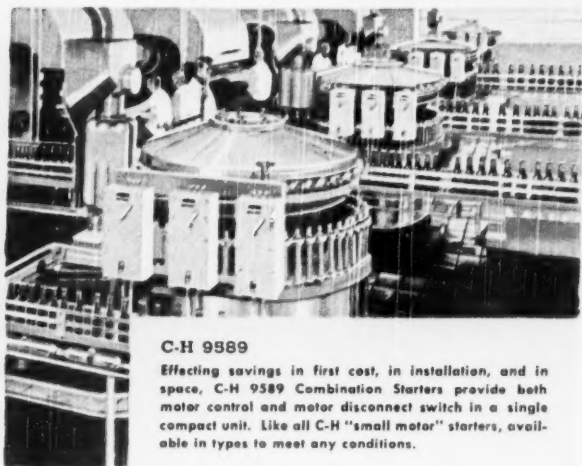
## C-H 9115

The simplest and lowest cost of all push button operated motor control with dependable easily-reset overload protection is the tremendously popular C-H 9115 Starter. Here are shown such units with C-H Safety Switches in a large modern textile mill.



## C-H 9586

Remote push button control or automatic operation from a variety of function-actuated switches may be obtained with the famous C-H 9586 Starter. Its many exclusive service-proven features make it the choice of both machinery builders and users.



## C-H 9589

Effecting savings in first cost, in installation, and in space, C-H 9589 Combination Starters provide both motor control and motor disconnect switch in a single compact unit. Like all C-H "small motor" starters, available in types to meet any conditions.

We all make it a point to remember certain numbers, telephone numbers, street numbers, license numbers, etc. If you are one of the many thousands of men responsible for the dependable and efficient performance of industry's millions of electric motors, it is more than likely that you have also long remembered C-H 9115, C-H 9586, and C-H 9589 . . . and use them regularly.

These are Cutler-Hammer catalog numbers, to be sure, but through the years they have attained a status of far greater significance. They are the quick and easy way to make sure of uniformly

*Cutler-Hammer general purpose motor control is recommended by a majority of all electric motor manufacturers, is featured as standard equipment by machinery builders, is carried in stock by recognized electrical wholesalers everywhere.*

satisfactory motor and machine performance. These numbers not only identify the type of starter you need but they assure you the many exclusive Cutler-Hammer design and performance features so easily missed unless you write pages of detailed specifications.

To be brief but sure, remember and use industry's three winning numbers, C-H 9115, C-H 9586, and C-H 9589 . . . It is the perfect combination.

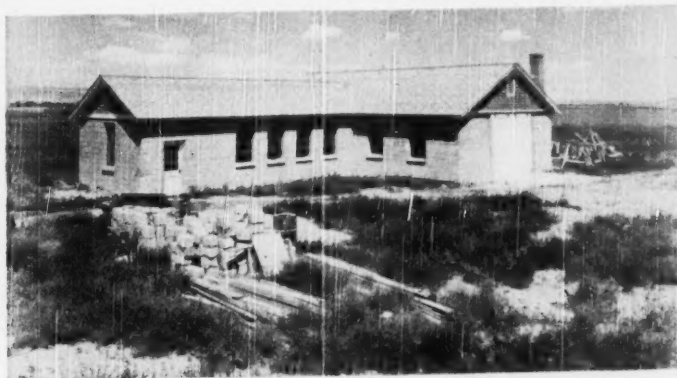
CUTLER-HAMMER, Inc., 1275 St. Paul Avenue, Milwaukee 1, Wisconsin. Associate: Canadian Cutler-Hammer, Ltd., Toronto.



# CONSTRUCTION



FROM THIS mixer and press combined come blocks of 90% dirt. And from these . . .



COMES BUILDING like this, an early experimental one, at Fort Washakie, Wyo.

## New Construction Material: Dirt

Machine developed by Topeka company brings earth-block building closer to commercial use. Soil-cement mix does it.

Any kid on the beach can make a pretty good house out of dirt. More ambitious builders have had a crack at it, too, from time to time, with varying degrees of success (BW—Dec. 12 '42, p. 63). But the rammed earth houses of the 30's took a lot more work than a kid's sand castle; and a lot of work means a high labor cost.

Now Economy Building Block Machine Co., Topeka, Kan., has come along with a machine that may put soil on the construction industry's map.

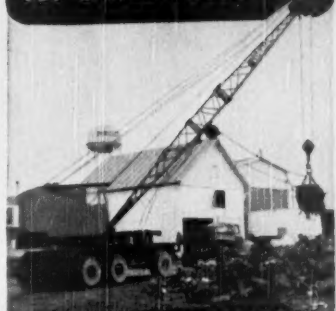
• **Portable Press**—What the machine does is turn out a building block that's 90% Kansas dirt, 10% cement—plus a little bit of water, if it's needed. The

machine is on wheels, so the whole plant can roll right up to the building site. It includes a mixer that doles out just the right proportions of soil and cement, dumps them into the block-maker. There, the mix gets a hydraulic squeeze of 1,000 psi., and out comes the block. The blocks are laid out to cure five days; then they're ready for work.

• **Market**—Harry Liggett, one of the owners of the company—and operator of an egg-drying plant—allows that populous communities probably wouldn't be much interested in his device. Too many other building materials are available. His idea is that

### CASE HISTORY

**LORAIN Cranes**  
*SAVE Dollars  
and Hours*  
for LARGE STEEL MILL



### 25% COST REDUCTION

"Cost reduction is approximately 25% and is all realized in our material handling and receiving departments." That's the savings in dollars by a large Eastern steel mill (name on request) using a Lorain Self-Propelled Crane. And this owner reports the extra advantages of extreme flexibility and mobility to serve two plants . . . more storage in less space . . . less floor maintenance of the storage areas because of rubber-tires.

### 45% MAN HOUR SAVING

"There is approximately 45% saving in man hours over previous methods." Again, the Lorain gets credit for more work — plus an increase in tonnage handled as compared with previous equipment. Use of an electric-magnet on the Lorain reduces hook-up time on steel handling operations. Fast moves with the Lorain cut waiting time for loading and transportation crews to the minimum.

**SEND FOR FREE BOOKLET** . . . Ask for your copy of "LORAINS IN INDUSTRY"—see how others are saving dollars and hours on material handling with Lorain Cranes.

The Thew Shovel Co., Lorain, Ohio

**THEW  
LORAIN**

World's Largest Builder of Commercial Size Power Cranes and Shovels

# from the ground up ...it's GARDNER-DENVER all the way

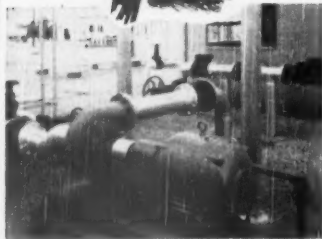


## The stone you build with

... is cut with Gardner-Denver Quarry Drills. Other raw materials—minerals, aggregates, coal and timber—are often produced with the aid of Gardner-Denver equipment.



## The oil to keep wheels turning

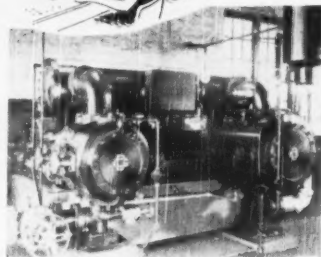


Refineries—processors of chemicals—of rubber, salt and tobacco, often choose quality Gardner-Denver compressors and pumps for key spots.



## The tools in your plant

Many metal working plants use air from Gardner-Denver compressors for operating pneumatic clamps, drills, wrenches, etc. So, too, do foundries, mattress and roofing material makers.



## In your business...

whatever it is—whatever its size—the chances are you can use Gardner-Denver compressors, pumps, rock drills or other pneumatic equipment to your advantage. Write us today. Gardner-Denver Company, Quincy, Illinois.

SINCE 1859

# GARDNER-DENVER

THE QUALITY LEADER IN COMPRESSORS, PUMPS AND ROCK DRILLS



CLOSEUP of delivery table shows soil-cement block coming off the hydraulic press.

rural areas would be just his meat, especially if good aggregates for a concrete mix weren't handy. Shipments of gravel and the like are expensive. A portable plant seems like an easy answer. The export market is another likely bet, Liggett thinks.

The Soil-Cement Bureau of the Portland Cement Assn., Chicago, is interested in Liggett's project.

• **First Job**—Economy Building Block is in the machinery business, not the building business. But before it can sell its machine it has to sell the blocks. That's its chief concern right now.

The company's home town provided a taker. Topeka Chair Rental Co. has just built a two-story soil-cement structure, part office and showroom, with a large apartment on the second floor.

• **Strong, Dense**—The blocks are solid and very dense, Liggett says; they don't absorb moisture readily.

And they are good and strong, Economy reports. Standing edgewise, they'll take a pressure of 1,000 psi.; lying flat, they'll take 2,500 psi. They are set up in double-wall construction for better insulation, mortared together, like any other block. And they take paint nicely, their sponsors say.

The 8x12x34-in. block sells for \$80 per thousand. Cement blocks in Topeka run \$170 per thousand for an 8x8x16-in. block. So the cost of the material per cubic foot of wall is very much the same in both cases.

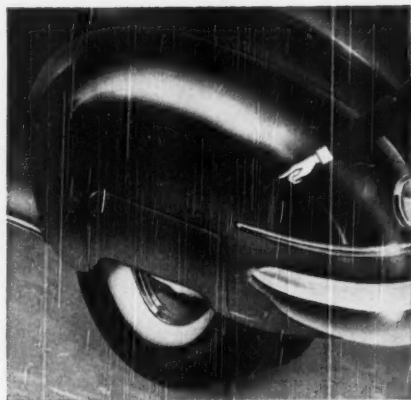
• **Backers**—Besides Liggett, the other block-backers are Martin Trued, Dan Meisinger—both Topekans—and Harry Barr, D. F. Carter, and Clement L. Wilson.

The machine they are pinning their hopes on was designed by James A. Davis. Davis got interested in earth-block building in his teaching days at Haskell Institute, Lawrence, Kan.

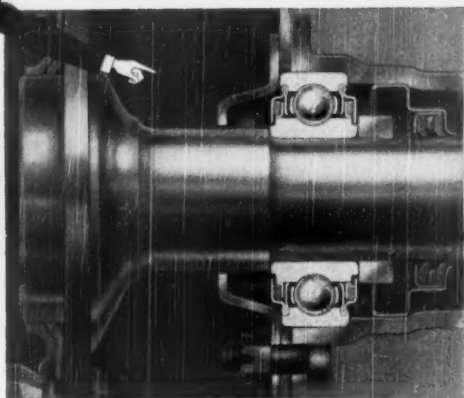


**New Departure Sealed-for-life  
Rear Wheel Ball Bearings  
*unsurpassed*  
for dependability and freedom from service**

# Built to be forgotten!



Proved by 16 years and billions of miles in actual service.



A New Departure creation—working unseen yet faithfully for driving pleasure.

Proof against neglect or wrong lubrication. No dirt can get in, no grease escape to cause slipping brakes. No bearing adjustment needed—ever! It is lubricated-for-life!

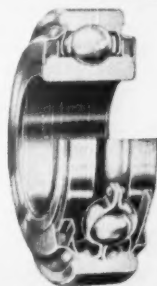
New Departure has produced over 159 million self-sealed ball bearings of various types.

This year millions of cars will roll easier—smoother—on New Departure sealed-for-life rear wheel ball bearings. Will yours?

A booklet of interest to automotive designers and owners alike will be sent on request.

*Nothing Rolls Like a Ball ...*

**NEW DEPARTURE  
BALL BEARINGS**

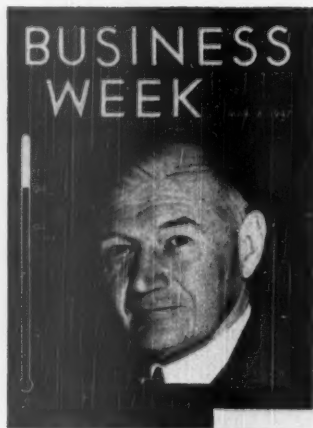


Also makers of the famous New Departure coaster brake.



How Business Week Reported . . .

## Phase I of the Atomic Era



**March, 1947:** Today no prudent businessman dares make plans reaching more than about five years into the future without at least weighing the possibility that the basis of his planning may be upset by commercialization of discoveries about the atom. . . . Commercial production of electric power from atomic engines is only about five years away; that's the informed assumption today. . . . A uranium bomb could be used to set

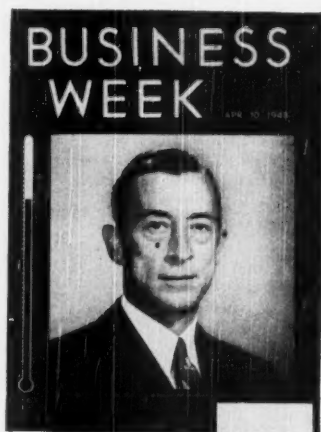
off an atomic reaction in a quantity of hydrogen—perhaps resulting in a bomb 100 or 1,000 times as powerful.

The Atomic Energy Commission has complete control over introduction of nuclear technology into industry. And the law leaves the commission almost unlimited discretion. Sometime in the 1950's, it may turn out to be one of the most powerful economic planning agencies in the federal government. For the present, it's an armament manufacturer.

**April, 1948:** The No. 1 job is to keep the war-built plants running; on this, there has been no faltering. No such endorsement can yet be given the over-all atom program. Six months or so ago, atomic development work was in a state of near stagnation. Today the situation is still spotty—good here, bad there—but visibly on the mend.

The program is above all things an armament program. Production of bombs takes precedence. Around 80% of AEC's effort is directly aimed at this.

The key fact about development of useful power is that no one in the United States needs atomic power very badly. The commission is scheduling its work to produce an economic



plant sometime around 1960. . . . The first substantial powerplants may well appear outside the United States.

**April, 1949:** This country's atomic energy program is now in good shape. The weapons job is under control; AEC is finally turning attention to the problems of power development, of reactors. For the next several years, the significant atomic energy developments can be expected to come in this field.

The real problem that has been absorbing attention all over the AEC is the design and building of a new plutonium plant at Hanford. . . .

Business Week Reports to Executives on—

## ATOMIC ENERGY 1950

# The Atomic Era—Second Phase

Some people are sure we need a new Manhattan Project—with unlimited funds overriding priorities, and a Gen. Groves in charge.

A few people figure the atom is a racket; let's quit coddling the atom boys and make them count pennies like everyone else.

Now is the time, still another theory goes, to stop kidding ourselves about the value of secrets. Get the information out; start industry using it; adjust our whole economy to an atomic age.

Alternatively—tighten up, build the fences higher. This time, let's make the Russians do their own research.

To everyone—for all the contradictory

prescriptions—one thing is clear: An historic bridge has been crossed, and from here on, all the rivers run the other way. The day of the U.S. atomic monopoly is over. The Russians have atom bombs.

That's a fact with a host of implications, military, political, economic.

But, inevitably, among the very first questions it raises is this one: How about the health of America's own atomic energy work? Is the Atomic Energy Commission up to its job—now that the job is to compete with the rest of the world rather than to cash in on a monopoly? How is AEC adjusting its programs to the new situation? What about industry—has the day when

atomic technology will have real meaning for business come closer or moved further away?

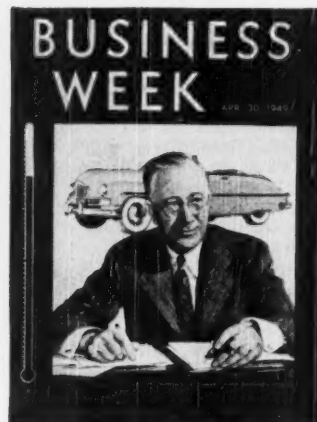
It was answers to questions like these that BUSINESS WEEK sought when it took its fourth over-all look at atomic energy this year. Once more, we have visited major atomic installations, talked to AEC and industry officials. Without access to restricted or secret information, we have evaluated as best we can U.S. atomic progress.

## Efficiency, Bureaucracy

A careful observer needs no access to secret information to reach one quick conclusion: The Atomic Energy Com-

Los Alamos is investigating energy-producing reactions among the light elements. Conceivably, this could lead to radically new and more powerful weapons, a superbomb.

Since July, 1945, we have been producing bombs at a rate on the order of 50 a year—maybe half that, maybe twice that. . . . As for the Russians,



we seem to have been guilty of some rather inept intelligence work. But it's reasonably certain the Russians have not actually made a bomb. Few atom people are inclined to think the Russians have made much progress; they tend to put the time at five years from now.

mission is a solid organization. It is calm, intelligent, workmanlike, torn by no feuds or empire-building; it is a well-integrated team doing its job with a smoothness few industrial organizations could better. In 1947 and 1948, AEC winced from growing pains. Now those pains are gone; the organizational structure, the assignment of duties have shaken down. Nearly every key post is now held by a man who has the confidence of his colleagues.

It takes no more than a casual acquaintance with this setup to make the talk of "a new Manhattan Project" sound rather silly. Compared with the present organization, the Manhattan District looks small and amateurish. Every year, AEC spends about as much money as the Manhattan Engineer District did at its peak. And it spends with a less lavish hand, gets more for its dollar. At the lower levels, particularly, it probably has a more competent staff. AEC scientists have gone back over the

wartime work, reduced MED's brilliant guesses to a solid technology. Where Gen. Groves' people knifed a narrow path through unknown territory to the single objective of Hiroshima—half the time by sheer intuition—AEC is pushing ahead on a broad technical front towards real nuclear engineering.

It's probably a sign of health in AEC that it's stronger at the bottom, at the working levels, than it is at the top.

This year, the organization has operated almost without policy-setting leadership. The commission itself has had an incomplete membership of uncertain tenure. Except for Acting Chairman Pike, all the members are new to the job.

A sound organization can operate on momentum for quite a while without real leadership. And AEC is a very sound organization. But after six months, the effects are beginning to show. Unmade decisions are piling up. The construction and research programs laid out last year are moving forward—but people aren't thinking ahead to the next programs.

## The Year of the Fourfold Shock

A year ago, AEC figured it was in the groove.

It was set to keep rolling out bombs at a gradually increasing rate. With four or five years more of monopoly ahead of it, it could count on possessing an irresistible stockpile of weapons by the time it had to worry about foreign competition. And meanwhile, AEC was squared away on a systematic search into the whole field of atomic engineering. A few years of that should knit atomic energy firmly into the colossal structure of American technology. Then the Russians, if they ever got into the running, would be as hopelessly outclassed as on production of steel or of automobiles.

Then, in the course of a few months, this rosy vision crashed against four shocking realities:

(1) A hostile, three-months-long congressional investigation revealed a deep public distrust of the whole mysterious atomic setup. Haunted by semi-conscious atomic fears, the public—and its congressmen—felt threatened by starry-eyed scientists carelessly revealing secrets that stood between American cities and radioactive horror. At the same time, the public seemed convinced that, behind an impenetrable wall of secrecy, atom people were throwing public money around carelessly and hiring unreliable people. For months, most of AEC's top men spent the bulk of their time bouncing back and forth between these two obsessions.

(2) The Fuchs case left AEC com-

## The Job Ahead

This summer, for the first time, a commission with reasonable assurance of tenure and continuity takes over AEC. When it does, it will face two major managerial jobs:

- It will have to make a drastic re-examination of AEC's work. Have the plans set up for a period of atomic monopoly really been adjusted yet to a period of atomic competition?

- It will have to find a way to keep AEC from foundering under the defects of its virtues. The atom crew's very professionalism and solidity create dangers of their own. The organization is losing its pioneering adventurous spirit, is in constant danger of sinking into an efficient but stolid routine.

This year, AEC is at that crucial stage, which every executive knows, when, having emerged from the throes of getting started, it is balanced between two courses: It might emerge as one of the little group of hotshot outfits which have found the way to be big and nimble at once; or it might sink into a high-grade bureaucracy.

pletely uncertain about what actually is secret and what isn't. Dr. Fuchs, a top-level British physicist, had taken a direct part in all the key wartime atomic work. There was almost nothing he hadn't had a chance to know. The only question was how much he had had a chance to pass along. The whole affair made the elaborate machinery of personnel clearance look rather hopeless, if not absurd.

(3) The Russians built a bomb. They weren't saying anything about it. But the sniffer planes reportedly caught the whiff of fission products in the upper atmosphere, and the sensitive seismographs felt the earth shake. There wasn't any doubt about it.

(4) Truman ordered AEC to make a hydrogen bomb. With major qualms, somewhat against their better judgment, the atom technicians had to swing over to a brand-new problem.

All these were the signs of a new phase of the atomic era, warnings that the time had come for complete rethinking of basic policy. No such rethinking has yet been done.

But the four shocks also dictated immediate action. In that area, you can see the results all over the atomic empire.

## Dangerous Wariness

A sophisticated answer to the Fuchs case and the congressional investigation might have been to play down the neg-

ative element of secrecy, replace it with a positive element. That would be to push ahead with a broad imaginative program that would tie atomic energy to the whole economy of the country, help AEC escape from its sinister isolation. But AEC isn't given to sophisticated policies. Not that it's an unsophisticated body; but in the absence of fresh leadership, Lilienthal's political timidity still dominates it.

So one immediate response has been a general tightening up of secrecy—not so much the kind of secrecy that impresses a spy as the kind of secrecy that impresses a congressman.

A more serious effect is this: Almost everyone in the organization has become intensely wary about sticking his neck out. Paper work multiplies; consultations become endless; decisions are slower. Hardly anyone dares to take any action without first stashing away the file of memoranda and transcribed

conversations which will impress an investigating congressman.

One extreme example: Congress forbade AEC to enlarge any authorized project without getting permission from the Bureau of the Budget. AEC ordered one contractor to make a design change in an important plant which would greatly increase capacity with no change in cost. But he refused to do it until the change had been cleared with the bureau.

Policywise, this same caution has meant concentrating effort and manpower on projects with an immediate short-term payoff, minimizing long-range investigations, playing no long shots. No one wants to risk the percentage of failures inevitable in any daring, imaginative program.

"What this country needs," growls one exasperated official, "is more bombs that don't explode and more reactors that do."

## The Limits of Atomic Energy

The hydrogen bomb is the one major exception to this no-long shots policy.

Actually, the decision to build the H-bomb was forced on AEC from outside; it was in large measure a political rather than a military or technical decision. And the public never got any glimpse of the real arguments for or against the project.

But that hardly mattered. In the frightened months right after the Soviet atomic explosion, the mere public intimation that a bomb a hundred or a thousand times bigger than the A-bomb might be possible guaranteed the attempt.

To get clear on what's involved, you have to go back to what you really mean by "atomic energy."

You get energy out of the atomic nucleus by rearranging the protons and neutrons of which it is made—much as you get chemical energy by rearranging the atoms in chemical molecules. Considerably oversimplified, it works like this:

Two forces are at work inside at atom.

- An electrical force makes the positively charged protons repel each other, as similar electric charges always do.

- The so-called binding force makes protons and neutrons attract each other at very short distances—distances comparable to the diameter of an atomic nucleus. At greater distances, the binding force falls off rapidly, and the electrical repulsion becomes the main force at work.

Now if you could take a small assortment of neutrons and protons and squeeze them close to each other, close enough for the binding force to act, they would snap together into an atom, releasing energy as they did so. (In much the same way, an oxygen atom and a carbon atom will snap together into a molecule of carbon monoxide, releasing heat.)

Press two such atoms close to each other and they'll snap together into a heavier atom, releasing more energy. You can keep that up until you get to at atom about the weight of silver.

To make very large atoms, you would have to shove the extra pieces in forcibly. The reasons for this are mathematically complicated, but an easy way to think of it is that the diameter of a big atom is getting close to the limit of range of the binding force; the electrical repulsion is beginning to gain on the binding attraction. Let the atom start to vibrate a bit and one of the pieces will get beyond the range of the binding force.

### No World of Silver

All this sounds as if the whole world ought to be made of silver. What's the catch?

As far as the lightweight elements are concerned, the catch is to get the pieces close enough to each other so that the binding force can snatch them. Whenever a positively charged proton tries to get near another proton or an atom nucleus, it runs smack against a terrific electrical repulsion. To shove it on through, you have to build a cyclotron as big as a house and

use thousands of watts getting the proton up to a speed equivalent to a temperature of millions of degrees—or else you have to be in the middle of the sun where the temperature actually is millions of degrees.

Likewise, a proton can break up a heavy atom only if it is going fast enough to drive through the electrical repulsion—and then have enough speed left to set up a vigorous vibration.

There's a major exception, of course. Atoms which have an odd number of pieces are, for somewhat complicated reasons, especially unstable. The three heaviest odd-numbered atoms—uranium 233, uranium 235, and plutonium 239—are so badly stretched that the merest bump makes them fly apart with terrific force. They are still protected against protons by their electrical field, but any wandering neutron can set them off. It's only because neutrons are scarce that they exist at all.

As everyone now knows, this situation becomes explosive if you concentrate one of these three materials in a chunk. Sooner or later, one of the atoms will split and toss out a lot of debris—including, on the average, nearly 2.5 neutrons. Naturally, if one of these neutrons happens to hit another atom, it will cause another fission.

In a small chunk the odds are against this. Even solid uranium is mostly empty space, and a neutron is likely to travel several inches before it hits anything. But if the chunk is above a certain critical size—something like 20 lb. or 30 lb.—one fission will start a couple of others, each of these a couple more, and within a few thousandths of a second, the whole thing lets go.

All you have to do to explode an A-bomb is to make two chunks of U-235 or plutonium (or U-233) each a little smaller than the critical size. Bring the two chunks together into one supercritical chunk, and the mass will explode. The trick is that you have to join the two chunks at lightning speed—in less time than the few thousandths of a second it takes for the fission chain to get going. Otherwise, the beginning of the reaction will blow the chunks apart again before there is a real explosion.

Ever since the war, AEC weapons researchers have been improving the efficiency of this process—getting more of the atoms to split before the expansion created by the explosion itself stops the chain reaction. According to Sen. Edwin Johnson, a member of the joint atomic energy committee, the process is now good enough to release six times as much energy as in the Hiroshima bomb.

Thus unless the efficiency of the wartime bomb was timier than seems likely,

uranium and plutonium bombs are getting close to the limit on power. Obviously, there's a definite ceiling. Each of the two masses to be assembled must be smaller than a critical mass. So the maximum power of an A-bomb

is that available in the fission of something less than two critical masses.

If you want bigger and better bombs, you have to look for other nuclear processes.

## Towards a Superbomb

Even before the first A-explosion at Alamogordo, Manhattan District scientists were thinking about the energy you get when protons or lightweight atoms snap together into bigger atoms. Calculation showed that explosion of a fission (uranium) bomb would create, momentarily, temperatures of around 20-million degrees. At a temperature like this, atomic particles move fast enough to burst through the barrier of electrical repulsion and fuse with each other.

It took only a few minutes' calculation to destroy any hope of a continuing, self-sustaining fusion process. The hotter anything gets, the faster it radiates heat away. So any small body would cool itself off far faster than the nuclear fusions could generate more heat. To get a self-sustaining "fire," you'd need a body the size of a star.

All the same, it looked as if during the fraction of a second that a fission bomb was exploding, and maybe a bit longer, a lot of fusions could take place and generate a lot of extra energy. It's sort of like burning wet paper in a snowstorm; the paper might burn as long as you hold a match to it—and maybe give more heat than the match alone would—but it would cool off and go out as soon as you took the match away.

It looked as if you could pack a lot of light material around an A-bomb and multiply its effectiveness manyfold—with no very obvious limits on how many fold.

The nuclear reaction to be sought was also pretty obvious. The helium nucleus—two protons and two neutrons—is an intensely stable one, so stable that the particles of larger atoms tend to group themselves in fours. That means that you can get maximum energy by assembling a helium atom.

### The Military Wins

That was about as far as the Manhattan District got. After the war, the organization fell apart, and for several years, it was all AEC could do to get fission-bomb production and development back on its feet.

About 1948, the weapons-research center at Los Alamos began a serious investigation of fusion processes—of how much energy you could expect to get by making helium from hydrogen before the thing cooled off.

From the welter of conflicting reports about what happened next, this seems to be the story:

Last fall, Los Alamos submitted a report on its findings. With moderate optimism, it said the thing was feasible. AEC's scientific advisory board went over the report—and recommended against devoting any substantial effort to the possibility. Lilienthal, also, was dubious about the value of a hydrogen-bomb project. So the report went to the White House without backing from the atom people themselves.

To Secretary of Defense Johnson, however, the idea looked really hot. So a bitter intra-governmental battle began—the most determined effort the military has yet made to influence atomic policy.

Essentially, the battle was settled in favor of the military as soon as infor-

mation about the dispute was leaked to the press.

### A "Hydrogen" Bomb?

What was the fighting about? Why would anyone oppose a superbomb?

What confuses the debate is the fact that it is not about "a hydrogen bomb." It is about two different bombs, neither of them, strictly speaking, hydrogen bombs.

Of these two, the bomb that would really be valuable probably won't work. And the one that is likely to work is of debatable value. Here's why:

Ordinary hydrogen fuses into helium only in a series of steps that take millions of years. The two materials that could be made to fuse into helium at high temperatures are: (1) deuterium, or heavy hydrogen, which consists of a proton and a neutron; (2) tritium, a proton and two neutrons. Both have the chemical properties of hydrogen but quite different mechanical and nuclear properties.

The crux of the matter comes back to time. The high temperature needed for any reaction can be maintained for only a tiny fraction of a second. The fusion reaction must be completed dur-

## Where the Russians Stand

If—as is more than likely—the Russians built their atom bomb with an emergency war-psychology sort of team like this country's wartime Manhattan Project, they are still in the position of amateurs competing with professionals.

In the absence of real information, that looks like a fair assumption. The Russian engineers and scientists must have been under the same fierce pressure for speed as were the Manhattan District people—and you don't get a broad, sophisticated technique that way. If something works, you don't ask why; you just praise Stalin and go ahead. That approach gives you a bomb of about the power of the Hiroshima weapon.

There's always the chance the Russians found some cheap quick way to make bombs. But more likely, they were too hypnotized by the U.S. Smyth Report to strike off on fresh lines. And if Smyth really was their bible, the Russians almost certainly built a Hanford-type pile.

They would have only one pile. For, although the Russians have some good technicians and good factories, they are spread pretty thin. That would make quantity production a problem. Since speed was the important thing, they would concentrate their efforts on one project.

Finally, you can be sure that the Soviet stockpile of bombs dates only from last July. There is no such thing as a small-scale test of atom bombs, so the first thing you do when you build one is fire it—to see if your design is any good.

Thus if you don't take the dimmest view, and are at least moderately optimistic, you can visualize something like this:

The Russian atom commission now has eight or 10 bombs. They may or may not be light enough to carry in a plane. And it has one rickety pile—and is trying desperately to figure out how the Hanford people have kept their equally rickety piles going for five years.



These are the 11-ft. poles atom people use for handling things they wouldn't touch with a 10-ft. pole.

At every atom plant, you'll find some kind of remote handling apparatus. At Argonne National Laboratory, a special unit has been evolving general purpose handling machines.

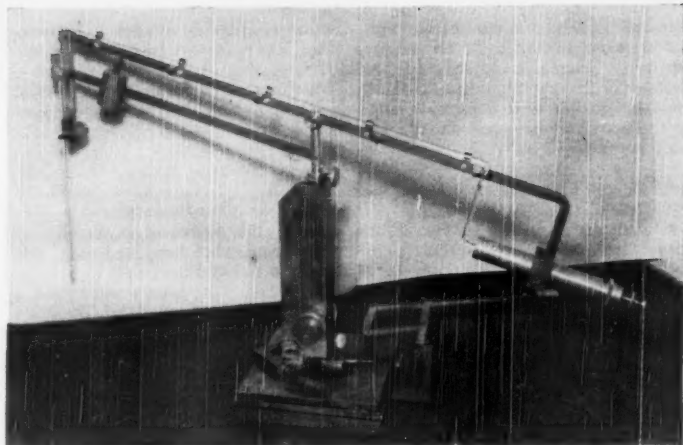
ing that short interval. A pair of deuterium atoms can fuse in something like three ten-thousandths of a second; just possibly this might be fast enough, but few think it likely.

The tritium reaction is more than 25 times as fast and looks really hopeful. Almost certainly, a tritium bomb, or perhaps a 50-50 combination of tritium and deuterium, is the only one worth fooling with right now.

This is unfortunate. Deuterium as a nuclear fuel would make a cheap and valuable addition to atomic armament. One part in 5,000 of natural hydrogen is deuterium, and it can be separated in large quantities by electrolysis of water.

Tritium is another story. It doesn't occur in nature at all; it must be manufactured. And you have to manufacture it in uranium piles of the Hanford type, competing directly with manufacture of plutonium.

The procedure starts with lithium—an extremely light metal with no particular commercial use except in some bearing alloys. One part in 10 of natural lithium is a special light form, Li6. Separating this is not necessary,



WARTIME equipment ran to one-shot apparatus like this—designed to dip into a bottle of radioactive solution, take out a measured quantity.

since Li6 captures neutrons much more readily than the more plentiful Li7.

The lithium would have to be inserted in a uranium pile to be bombarded with neutrons. Each time a neutron hit a Li6 atom, it would form an atom of helium, of no particular use, plus an atom of tritium, fuel for a bomb.

To load tritium (or deuterium either, for that matter) into a bomb, you have to liquefy it to make it compact enough to feel the full effects of the uranium "fuze." This means cooling it to within a few degrees of absolute zero and keeping it cold until the time it is exploded.

Finally, unlike plutonium, tritium cannot be stored indefinitely. It is radioactive, and half of it destroys itself every 12 years.

Now that Truman has ordered AEC to make a hydrogen bomb, how vigorously is the work being pushed? Is the commission throwing the bulk of its budget into the project, or is it making a perfunctory pass at the job?

The facts lie somewhere between. AEC is not yet spending any large sums. The construction contractors and the designers are busy with expanding A-bomb production. On the other hand, the weapons laboratory at Los Alamos is going all out on the research and development side of the hydrogen program. The bomb-assembly work which used to center at Los Alamos has been shifted to Sandia Works at Albuquerque, to Hanford, and to other centers.

The atmosphere at Los Alamos—adventurous and exuberant—is reminiscent of wartime. The 2,000 laboratory workers there have gone back to a six-day week, and just about everyone approves.

Some of the big-name scientists from the Manhattan District days are heading back to Los Alamos. One of them is Edward Teller, who now heads the division of weapons research. He is scolding his academic colleagues for not returning to weapons work fast enough. But some Los Alamos executives don't think it's necessary for them to. They argue that the present laboratory staff is just as competent, if not as spectacular, as the Manhattan District ever was. Further, they feel that the big names have done their best work and the new discoveries will be made by youngsters. Teller's answer: Internationally known physicists are like beautiful women; the smart young men follow them around.

Actually, this debate over personnel symbolizes a basic issue of atomic pol-

## Where the Superbomb Stands

If a mixed tritium-deuterium bomb can be made to explode, and with about the same efficiency as plutonium, production of superbombs 10 times as powerful, say, as a modern A-bomb would require an industrial effort something like this:

(1) Production of about half a ton of lithium metal per bomb.

(2) Several huge atomic reactors, similar to those at Hanford, to transmute the Li6 into tritium.

(3) Much development work on extreme refrigeration.

Point (2) is the hard one. The Hanford plant cost \$350-million and produces, the Smythe Report hints, about two pounds a day of plutonium. An equivalent plant would take more than two years to make enough tritium for

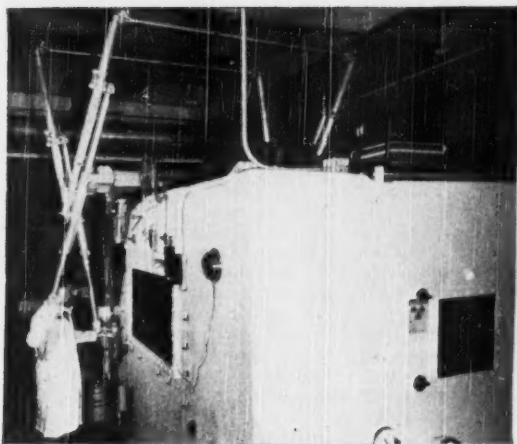
one bomb equivalent to 10 A-bombs.

Meanwhile, such a plant could have been turning out 60 or 70 A-bombs.

Of course, a 10-power bomb will not be 10 times as destructive as an A-bomb. Actually, where a Hiroshima-type A-bomb gave a radius of effective destruction of about a mile, and a modern bomb a radius of a little under two miles, a 10-power bomb would have a destruction radius of perhaps five miles.

In pure economics of destruction, the deal doesn't look too favorable. However, the psychological and political effects of a tenfold increase in bomb power would be tremendous. And, militarily, the chance of destroying a small high-priority target under difficult aiming conditions would be increased.

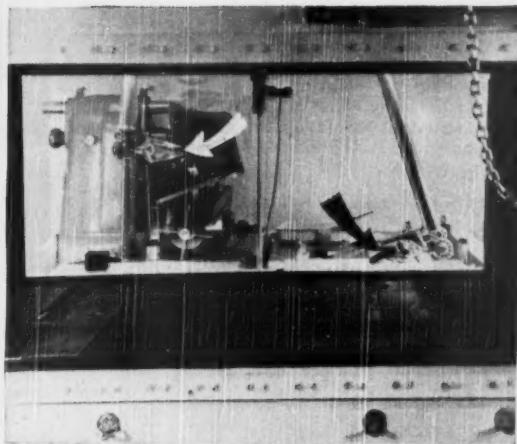




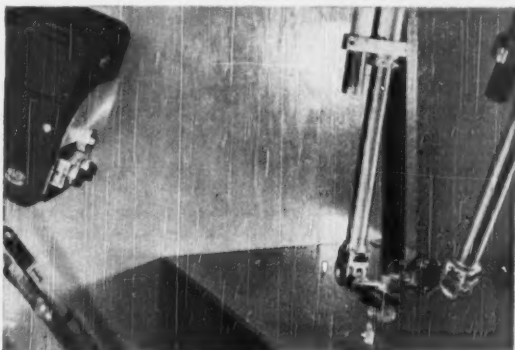
TODAY workers at this lead-lined "cave" slip their fingers into a pair of grips, control . . .



NEXT STEP is television. Worker with Polaroid glasses sees three-dimension view on double TV screen. In cave . . .



A PAIR OF metal hands (arrows) on the other side of a thick window. They are loading radioactive metal into a machine tool.



TWIN-LENSED TV camera watches experiment. This way, future electric handlers can work from any distance.

icy. Teller speaks for the crisis-response to Russian atomic achievements—the response which is now dominant in AEC planning. Now is the time, according to this view, to concentrate everything on immediate short-term achievement of maximum armament within the next two or three years.

A minority takes the opposite position: These opening months of the second phase of the atomic age are the very time to buckle down to a permanent long-term program. Now, more than ever, you dare not weaken yourself five years from now to gain an advantage two years from now. It would be a mistake, for instance, to risk crippling basic nuclear research and training of new scientists by pulling the key men out of the universities into weapon development.

### Change at Los Alamos

That Los Alamos now has the muscle to tackle a challenging program with

such zest and earnestness testifies to the skill of the laboratory's leadership. In the postwar collapse of the atom-bomb organization, Los Alamos fell furthest. Only two years ago, the laboratory on the New Mexican mesa top was unquestionably the weakest of AEC's installations (BW—Apr. 10 '48, p47). Today, it's the most impressive of them.

Most of the credit for the change belongs to Norris Bradbury, laboratory director. Bradbury is an outstanding example of the new postwar leadership growing up in the atom program. A slight, intellectual-looking man with a quiet manner and an air of deep sincerity, he made no outstanding record under the Manhattan District. Most

outsiders took his appointment as director as evidence of the low estate to which the laboratory had fallen.

But over the past three years, Bradbury has pumped new self-confidence into his shaken, despondent staff. Almost independently of AEC in Washington, he set rolling a major program of postwar research, planned and started work on a complete new physical plant for the jerry-built war laboratory.

At the same time, AEC Administrator Carrol Tyler has converted the drab townsite into one of the most charming communities in America. Tyler is almost the complete antithesis of Bradbury—a bluff, beefy, desk-pounding ex-Navy captain; but he has made it his business to back Bradbury to the hilt.

## A-Bombs Before H-Bombs

The hydrogen bomb gets the headlines, but this country's real and significant answer to Russia's atom bomb

achievement is something less dramatic: an intense speedup of plans for expanded production of the two A-bomb

explosives, uranium 235 and plutonium.

Construction originally expected to stretch out over three to five years is being condensed into a couple. Bomb production is probably substantially higher than the 50 a year of several years ago (*BUSINESS WEEK's* guess, BW—Apr.30'49,p67). By the end of 1951, it may well be doubled.

The biggest speedup has come at the Oak Ridge isotope separation plant. Just as the Russians shot their bomb, Oak Ridge was ready to start work on a substantial addition, K-29, to the K-25 gaseous diffusion plant for separating U-235. The \$60-million job was immediately put on a high-speed schedule.

As K-29 got underway, AEC and its operating contractor, Carbide & Carbon, pulled out of the pigeonhole plans for an even larger new plant, K-31. This unit, to cost \$185-million, was being designed on an if-and-when basis. AEC pushed the design ahead, and construction started in January of this year.

K-29 and K-31 will not simply parallel K-25; they will be an integral part of it. Gaseous diffusion is a cascade process. A lot of natural uranium (in the form of uranium hexafluoride, a gas) goes into the top of the cascade. Pumps push it endlessly through porous barrier pipes. U-235 leaks through the sides of the pipe a tiny bit easier than U-238. So the leakage gas has a higher proportion of U-235.

It is whisked away by more pumps, passed through another set of barrier tubes—and so on, stage after stage, the gas getting richer at each stage. The U-235, about 0.7% of the total, goes all through the plant. But at each stage, some of the U-238 is skimmed off. So the successive stages handle smaller and smaller quantities of gas.

To expand a plant of this type, you add more and larger stages at the high end of the cascade. Then a larger volume of unseparated gas goes into the new top of the cascade. The original first stage still handles the same volume of gas, but now it's gas which has a larger-than-normal percentage of U-235. And, of course, the total output of U-235 at the low end of the cascade is greater.

Except in size of equipment, the two new plants at the high end of the cascade will not differ greatly from the existing plant. But right from the start, they will incorporate a mass of detailed improvements which have been introduced into K-25 over the years. The most significant of these changes involve a great increase in automatic and centralized controls which have cut deeply into the manpower needed to run the plants.

When engineers for Maxon Corp., the construction contractor, got their

first look at the blueprints for the acres-wide K-29 plant, their first question was, "Where are the toilets? You don't have enough for a plant that size." They were told the entire setup was to be operated by a very few men who could ride to the toilets on bicycles.

Despite plant expansion, this rapid reduction in manpower needs gives Oak Ridge a peculiarly desolate and sad atmosphere. A few dozen cars look lost in a huge parking lot; a tiny clump of southern girls chatter quietly at one end of an enormous bus-loading platform. The paint scales away from blocks of abandoned warehouses and barracks. In this ghost-town setting, Carbide & Carbon people move cheerfully, competently—and unexcitedly—about their business.

## Expansion at Hanford

Richland, Wash., is a harsh, bustling company town that might as easily be turning out gasoline or synthetic rubber as plutonium. But it does feel the expansion of the Hanford Engineer Works. There have been few spectacular labor savings to counterbalance the influx of construction crews and workers for the new plants. But even so, there's no scent of emergency here—just the easy feel of competence, of skilled men doing jobs they have no reason to doubt can be done.

The expansion program at Hanford has been through several ups and downs since the end of the war. When General Electric Co. first took over the management, the plan was to build three new piles to replace the three war-wearies, which were about at the end of their rope. Also needed was a

## Atoms for Power

In the days just before the Russian bomb explosion shifted the emphasis back toward military matters, development of reactors (atomic engines) was becoming the most active phase of AEC's work. Reactors had been neglected for years—so badly that the British, and perhaps the Canadians, were well ahead of this country. Late in 1948, with bomb production in a satisfactory state, the commission decided to correct this lag by launching a vigorous program of reactor work.

AEC approved immediate construction of four new-type reactors and studies of several others. (For details on these reactors and the theory behind them, see BW—Apr.30'49,p67.) The four:

The Experimental Breeder Reactor

new chemical separation plant which could extract more of the plutonium from the slugs discharged by the piles. The new separation plant was also to be capable of concentrating the radioactive fission products in the slugs. That would ease the brutal problem of storing thousands of gallons of deadly waste.

As it turned out, GE was unexpectedly successful in putting new vigor into the old piles; they are still running and seem to have a long life ahead. At the same time, AEC and its contractors were unable to develop a satisfactory process to be used in the new chemical plant. So construction of one of the scheduled piles was deferred indefinitely. The two others went ahead on schedule.

Last summer, when the heat went on, the chemical problem had just been licked. The Oak Ridge and Argonne laboratories, Blaw-Knox, Kellogg Corp., Carbide & Carbon and Esso's Standard Development Corp.—all of whom had been working on the problem—had come up with a new and improved process. And Kellogg Corp. had begun design of a plant. This process, AEC believes, is more efficient and will help on the waste-material problem. Design was rushed; construction is now under way.

So far, nothing has been done about picking up the third new pile again, but it's a safe bet that it will be put under way before many months. Because the delay gave time for more elaborate design, it will be the first really modern production reactor.

One can guess that this third reactor will be modified to produce an initial supply of tritium for the H-bomb project.

(EBR) is a small, comparatively cheap (about \$3-million) machine intended to test the possibility of breeding fuel—to see whether you can burn a pound of U-235 and, in the process, transmute more than a pound of U-238 into plutonium. In addition, it will run at a high temperature, get its heat out by circulating liquid metal, and so provide a small demonstration of power production.

Construction is now well along. It will start operating early next year—though it may take months of tuneup really to test breeding. No one doubts that the reactor will breed to some extent; the question is whether the percentage of breeding will be large enough to show up in the quantity of plutonium a practical chemical plant can actually extract.

The Materials Testing Reactor (MTR). This is a big, expensive reactor with a definite job. It is so designed that construction materials can be put into it. Then the same intense neutron bombardment which hits everything inside a high-power reactor will hit these materials. Thus it will help immensely in the design of other reactors. Although delay in setting up the Arco, Idaho, reactor center held up MTR to some extent, it is now under construction. It will be functioning late next year or early in 1952.

**Submarine engine** has the highest priority among all the reactor projects. Westinghouse and the Argonne laboratory are pushing ahead with design. They hope to start building it this year, finish it in 1952. The Navy is already designing a submarine to carry it. The first reactor will be built on dry land at Arco, and the power take-off arrangements will be breadboarded together with no attempt at the compactness of marine engineering. However, power equipment neat enough to fit inside a submarine will come along only a few months later, and the reactor itself will be built to submarine dimensions.

A **pilot model** of a central-station powerplant was originally supposed to

have been under construction by now. A General Electric project, it was intended as the first concrete step toward commercial atomic power.

This project has been canceled—a casualty of the Soviet bomb. GE contributed to the cancellation by rather slow progress on design. When the time came to build, no firm specifications or cost estimates were ready. However, the main reason was to free more technical people for military work.

A few weeks ago, Lawrence Hafstad, director of AEC's reactor division, put together a list of all the engineers and physicists in the country—whether or not they worked for AEC—who were competent to take a responsible part on reactor projects. The whole list fit very comfortably on two loosely typewritten sheets. And a substantial part of the list was at GE's Knolls Atomic Power Laboratory. Now they will be free to help with the expansion at Hanford, perhaps with some hydrogen work, and with a new Navy project.

A second submarine engine is the new job at the Knolls. This will be quite different from the Westinghouse machine, both in its nuclear and its mechanical properties. The reactor will operate with medium-speed neutrons, where Westinghouse is working with

the more familiar slow-neutron reaction. And GE will circulate liquid metal to get the heat out; Westinghouse is using something else, perhaps helium gas.

## Atoms for Planes

The airplane engine project of the Air Force (NEPA) is still in a somewhat ambiguous position. The new emphasis on military applications might be expected to increase its importance. Working against it, however, is the current pressure for immediate as against long-range results.

Two years ago, an appraisal of NEPA by an outside group from MIT concluded that it would take too long and cost too much to develop an atomic airplane engine. That is still the official view. Fairchild Engine & Airplane Corp. has been pushing along preliminary work with a comparatively small staff, a low priority on technical people, and an annual budget of about \$10-million of Air Force and Navy money.

In the past two years, however, the work has made a lot of progress. Today, NEPA looks like a much quicker and less expensive goal. It seems likely that new pressure will be put behind this job before long.

## Atom Power For U. S. Industry?

To the businessman, what does all this mean? Should he write off useful power from the atom as a dream and consign the whole thing to the military along with high explosives and rockets? Offhand, it looks that way.

Actually, though, practical atomic power is closer today than ever before. But it is going to arrive in a way no one had expected.

Right now, hardly anyone is interested in huge central-station atomic power plants, or in debating whether atomic power will cost a bit more or a bit less than power from coal. America has plenty of fuel, and the prospect of saving a mill or two per kilowatt-hour is not terribly exciting.

What does look exciting today are the things atomic power promises to do that no other fuel is able to do at any price—particularly in the field of transportation.

Atom people are fond of pointing to the history of the diesel engine. The diesels that power modern locomotives, they point out, were developed and service tested and brought to maturity as submarine powerplants. At Westinghouse and at GE, atomic engines seem to be starting down the same road.

There's more than a historical coincidence involved. Petroleum came into use as fuel, even when it cost a lot

more than coal, because it was infinitely more convenient than coal—for moving powerplants. Today the Navy, soon perhaps commercial users, will pay a high premium for the even greater convenience of a practically weightless atomic fuel.

In a decade or two, it may come to seem archaic and absurd that any big vehicle should devote carrying capacity to hauling its own fuel around, or should have to squat down every 500 or 1,000 miles to take on more fuel. It may seem natural and expected that a ship, a plane, a locomotive should run for months or years before anyone even has to glance at its fuel gauge.

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## REGIONS

### Shrimpers Fill Town Tills

Brown shrimp from Brazil and the fishermen who catch them have boosted Brownsville's income \$10-million.

Shrimp's the big thing around Brownsville, Tex.; big reddish-brown shrimp that some of the natives call Brazilian because one story says they started out in Brazil.

These small crustaceans brought somewhere near \$10-million into pockets and cash registers in the Brownsville area last year. That kind of money would give the local citizenry ample excuse for interceding on behalf of the shrimp fishermen if anything ever came up which might prevent them from filling their holds with shrimp and the city's coffers with lucre. And that's what's happening now.

• **Threat**—Last week, the Texas Supreme Court began hearings to determine the constitutionality of a state law under which the police have been giving the fishermen a hard time. And a committee of area businessmen was right there to help the shrimpers.

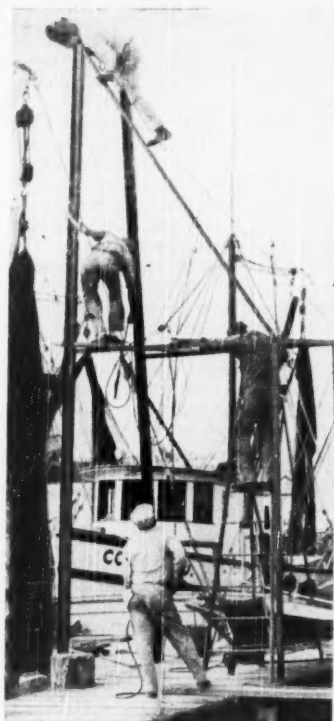
The law in question requires that the shrimpers have licenses before they can operate boats in Texas coastal waters. These licenses cost only \$6 a year. But the catch is that there's a limit on the number issued.

The whole thing started about three years ago. At that time, there were a few shrimpers operating out of nearby Port Isabel, but none at Brownsville. Then a lot of them began drifting in from Louisiana, Florida, and Georgia. They were looking for more productive fishing grounds, and the waters near Brownsville looked good.

The state greeted these outsiders with a brand-new nonresident boat license—and it cost \$2,500 a year. Even so, fishing possibilities looked so good that six of the newcomers paid the fees. Most left, however, when the state supreme court upheld the fees.

• **Off Again, On Again**—A couple of years later, the U.S. Supreme Court threw out a South Carolina law that was much like the Texas one. So a lot of the out-of-state shrimpers came back, figuring that they wouldn't have to pay the stiff fees.

Then on Apr. 6, 1949, Texas changed the law and adopted the present \$6 license fee. At the same time, the big brown-shrimp strike occurred, and



TRAWLERS like this one make the catch.

shrimpers started moving back into the area by the hundreds. State officials immediately slapped a freeze on the number of boat licenses. That meant that anybody who had one when the new law was passed could keep it, but nobody else could get one.

Two months later, when there were 2,007 licenses issued, the state's Game, Fish, & Oyster Commission cut the quota to 1,550 boats. That left more than 250 shrimpers without licenses.

But the waters were so rich with shrimp, that unlicensed fishermen figured it was worth the risk of a fine, a possible jail sentence, and an injunction against fishing in Texas waters. Besides, they had hopes that the law would be changed.

• **Pillar to Post**—Most of them operated farther down the water off the coast of Mexico and out of the jurisdiction of Texas authorities—until the Mexicans started cracking down on them (BW—May 20 '50, p138). Then they



started dragging in Texas waters, and conservation men really began putting the blocks to them. More than 40 of the shrimp trawlers have already been caught, fined, and enjoined from fishing again. But these injunctions have been held up pending the current hearing by the state supreme court.

• **Big Stake**—Almost everybody in the area is fighting for the shrimpers' licenses because almost everybody has a big stake in them.

Nearly 300 trawlers moved back into the area in April of last year. Each one carried a crew of three to five men. They cut at the rate of \$50 per boat per week. There are two to three families for every boat, and they all either pay rent or have bought homes.

Total payroll of the fleet's crew runs around \$3,750,000 a year. But the shrimp industry has made plenty of new jobs on the shore, too. Boats must be built, fueled, repaired; shrimps must be handled, packed, and shipped.

In Brownsville, people are especially happy about the shrimp boom. A big construction crew that had been living in town for a long time building a synthetic-gasoline plant and two other industrial plants moved out at the end of last year. Ordinarily, that would have put a big dent in the area's economy. But there were plenty of people with shrimp money to take over their homes and replace their purchasing power.

About six months ago, the boom even brought a boat works into town to build new trawlers. So far, it has turned out three new boats, which put another \$75,000 into the town tills. And four more are now on the ways.

• **White or Brown**—The only really big setback shrimpers have had, they figure, was reluctance of people in this country—who were used to white shrimp—to buy their brown ones. But a big promotional campaign all over the country fixed that in a hurry.

Today, about 25% of all the shrimp that comes into the U. S. comes through Brownsville. In the past year, more than 10-million lb. came in. That makes Brownsville the biggest shrimp town in the world.

Most observers figure that's too big a hunk of money for Texas to throw away, so they think that if the state court doesn't give Brownsville a break, the legislature or conservation department will change the license setup.

• **Federal Eye**—But either way, the federal government has its own eye on the Brownsville area. Brownsville shrimpers have been operating off Mexico—and getting in trouble for it. That's because, while the U. S. claims jurisdiction only over a three-mile limit, Mexico claims a nine-mile zone. So the government wants to straighten out the situation and keep Brownsville fishermen out of trouble.



# skylines... by Otis

**Cincinnati** is "closest to America" in three ways that are important to business today. *It's closer to markets:* It is at the center of a 400-mile circle that contains 40% of the U. S. population. *It's closer to raw materials:* It offers short-haul savings to industries using sizable quantities of sheet steel, coal and other heavyweight basics. *It's closer to skilled labor:* It has a higher percentage of skilled workers than the national average. Otis is proud to be a citizen of Cincinnati — where our local office has been installing and servicing vertical transportation since 1882.

## A TOUCH OF EXCITEMENT

Signaling for an elevator is no longer a push-the-button-and-wait routine. It's an exciting, and somewhat mystifying, experience with the new Otis electronic touch button. Nothing moves. A mere touch of a finger lights the directional arrow.



## ANOTHER FAIR EXCHANGE

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## THAT'S HEADROOM ENOUGH

10'-4" is enough headroom for a light-duty freight elevator. No penthouse is needed. Otis Self-Supporting Freight Elevators have 1,500, 2,000 and 2,500 lb. lifting capacities. Any rise up to 35'-0".



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Innerlocking frames and other constructional features make Michaels display cases theft-proof and dustproof.

Cases are available in a wide range of styles and sizes to meet most requirements. Michaels also

manufactures special cases in any quantity for concerns who supply their dealers with display cases. Write for complete details.



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## How to lose money . . . quietly!

An old mail scale never complains . . . doesn't creak, squeak, groan or ask for sick leave. But if its springs are tired, and give too much . . . it can cause continuous *overpayment* of postage—lose a dollar or more a day in even a small office!

PB Mailing Scales have built-in accuracy . . . with an automatic pendulum mechanism that lasts for years . . . Quick acting, they weigh mail fast . . . Their wide-spaced markings are easy to read . . . A postage saver in many offices, a time saver in any!

. . . A special Parcel Post model for shipping departments . . . Call the nearest PB office, or write for illustrated booklet!



**PITNEY-BOWES  
Mailing Scales**

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1436 Pacific St., Stamford, Conn.

Originators of the postage meter . . . offices in 93 cities.



## Power Speedup

Pacific Northwest may get power from Hungry Horse dam a year earlier with shift from concrete to steel construction.

Since the war, the Pacific Northwest has been growing far faster than its electric power capacity. A survey of the region by the Edison Electric Institute shows that in 1952 capacity may lag behind the anticipated peak load by as much as 7.5%. Under good, high-water conditions, capacity might lead the load, but only by a narrow 6.5% reserve.

• **Famine to Feast**—However, a simple design change in one hydroelectric power project may turn the region's power-famine into a power-feast; almost certainly, it will make the difference between a serious shortage and an adequate reserve.

The Bureau of Reclamation recently agreed to change the design of its powerhouse at the big Hungry Horse dam project in Montana from a reinforced-concrete to a steel-frame structure. This one change—at an extra cost of \$155,000—is calculated to give the Pacific Northwest 125,000 kw. of power a whole year earlier than expected.

• **Steel Is Faster**—A steel-frame building can be put up faster because the work can be done year-round; reinforced-concrete work would be interrupted by winter. As soon as the frame is up, traveling cranes can be mounted. Only then can the turbines and later the generators be installed.

Working over next winter, the contractor will be able to mount two 290-ton cranes in the Hungry Horse powerhouse by July, 1951. By October, 1952, the first generator should be operating; the second is expected to deliver power by December, 1952. Had the Bureau of Reclamation stuck to the original plans calling for reinforced-concrete construction, the Hungry Horse project probably would not have been ready to start generating before the end of 1953.

• **Big Dam**—In the meantime, work is going on at the dam itself. Right now, the dam is nothing more than a series of huge concrete blocks on the floor of a canyon on the south fork of Montana's Flathead River, 18 mi. from Kalispell. When it is finished, late in 1953, it will be the fourth-largest dam in the world. The \$43,431,000 construction contract (the second biggest that USBR has handled) calls for water storage to start in the dam in 1951. There are to be 1-million acre-ft. available by the end of 1952, with an ultimate capacity of 34-million acre-ft.



*"Marshalling the forces of advertising to help solve national problems and to make democracy work better..."*

Do you know that the forces of advertising are engaged today in one of the world's greatest jobs of mass education... in the public interest?

Do you know that these forces for good have been released through the vision and unselfish cooperation of American business — advertisers, advertising agencies, media owners and others?

Hundreds of advertising agencies have volunteered their planning and creative time and facilities. Artists, cartoonists, photo-engravers, printers, typographers and others have contributed their services.

Media owners have donated millions of dollars in space and time. National and local advertisers have sponsored and paid for many millions of public service advertising messages.

As a result, the American people are being alerted as never before to the dangers which threaten from within and from without... the dangers of ignorance about our American economic system, intolerance, tuberculosis, school and teacher shortages, etc.

And, at the hub of this great public service effort is your organization... The Advertising Council.

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Right now The Advertising Council has 14 programs in operation. The success of these programs depends on the public spirited and generous cooperation of advertisers and media owners. *Your* help, in the form of space or time donations,

will mean a lot to us. And remember... *What helps America helps you!*

#### **Yours for the Asking**

Write for a copy of Booklet No. 15. It will give you pertinent information about The Advertising Council... how it started... what it is... what it does... Or ask for material on specific campaigns. Address: — The Advertising Council, 25 West 45th Street, New York 19, N. Y.



*Published in the public interest by*  
**BUSINESS WEEK**

\*A NON-PROFIT ORGANIZATION FORMED TO UTILIZE ADVERTISING IN THE PUBLIC GOOD

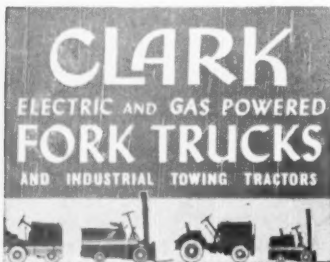
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Without leaving your own offices, you can "visit" many of America's foremost industrial installations and see Clark fork-lift trucks and towing tractors on the job—speeding the flow of materials, increasing productive capacity, lowering break-even points by slashing handling costs from 20 to 80 per cent.

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Please send films: ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6.

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PLOTTING areas to be sprayed. Operation Big Squirt was thoroughly military.



POURING sacks of DDT into kerosene. It was mixed like a prescription.



MIXING the solution at Plymouth airport, headquarters for the mass attack on moths.



SPRAYING was done by helicopters, biplanes, and a C-46, piloted by veterans.

## Massachusetts Wars on Gypsy Moths

Massachusetts has just wound up Operation Big Squirt. That's the state's million-dollar project to get rid of its gypsy moths, which have infested vast areas and caused around \$58-million worth of damage since 1890.

The operation had all the earmarks of a military offensive. It was led by H. L. Ramsey, chief superintendent of pest control in the Massachusetts Dept. of Conservation.

Ramsey planned the campaign for a year. An aroused citizenry paid out tax money without a murmur to carry on the operation. A fleet of biplanes, one big C-46, and some helicopters made up the task force.

The pilots—all combat veterans—leaped into their planes at dawn, before the wind came up to blow the spray away. Wind socks and helium-filled balloons (pet-named skytoons) at the areas to be sprayed guided the pilots to their targets.

Every day, 800 numbered glass slides were placed in the sections to be sprayed. They were all rounded up within four hours after spraying and

analyzed to see whether the spray was dispersed perfectly.

The spray—365,000 gal. of it—was made up of kerosene oil, DDT, and inert substances. Ramsey's men compounded it carefully before loading it into the planes. Cost: \$1 an acre, using 1 gal. of spray per acre.

The proportions, worked out by the U. S. Bureau of Entomology and Plant Quarantine, proved effective in an experimental spraying last year. The spray is lethal to gypsy moths, house flies and ticks, but isn't at all harmful to bees, birds, farm animals, or human beings.

The citizens hope this year will see the last of the gypsy moths. A French scientist brought them to the state in 1890. He was going to breed a superior silkworm, but the scientist's assistant allowed the moths to escape before he got around to it, and they've been a pest ever since.

But the rest of the country doesn't need to worry about a quick immigration wave of gypsy moths. The female moths can't fly.



Another of the Jobs\* that Stainless Steel does BEST

# \*Chemical Containers

that are **SAFER,**  
**LIGHTER,**  
**MORE ECONOMICAL**  
**TO STORE AND SHIP**



**F**OR YEARS and years, commercial acids and other "bad" chemicals were shipped in glass carboys protected up to the neck by unwieldy wooden crates. At very first glance, you will see how these modern stainless steel chemical containers were vast improvements in strength, safety and ease of handling, but there were other important advantages.

For one thing, each stainless drum holds 25% more acid by volume than a carboy, yet weighs some 10% less when filled. The saving in freight rates alone, every time the drum is shipped and returned, is more than 30%. In addition, the stainless container is designed to self-stack, solidly and securely. A two-high stack of drums, compared to unstacked carboys, gives you about three times as much gallonage per square foot of floor space in a freight car, truck bed or warehouse.

Like so many other applications for Allegheny Metal, therefore, these chemical containers soon pay for themselves and then go on making clear profit. Take a fresh look around you . . . see if there aren't ways in which we can help you to realize dividends from the use of this pioneer stainless steel.

\* \* \* \* \*

Complete technical and fabricating data—engineering help, too—are yours for the asking from Allegheny Ludlum Steel Corporation, Pittsburgh, Pa. . . . the nation's leading producer of stainless steel in all forms. Branch Offices are located in principal cities, coast to coast, and Warehouse Stocks of Allegheny Stainless Steel are carried by all Joseph T. Ryerson & Son, Inc. plants.

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**Allegheny Metal**



W & O 3150

Why buy a Pig  
to get a  
Pork Chop?



**Eliminate scrap losses and costly materials handling—let Reynolds make your aluminum stampings and formed parts**

**Y**OUR savings start—and grow—when Reynolds starts fabricating your aluminum parts. For example, you can eliminate costly materials handling. No more needless expense for sorting, baling and disposal of scrap. Rejects are no longer a cost problem. Parts are ready for use or further processing and assembly in your plant. And you get them on schedule—at a fixed cost.

Here are more important advantages: **1** reduces plant and equipment investment; **2** eliminates raw material inventory; **3** delays material billing; **4** leaves more time for sales planning.

Write for folder "Aluminum Stampings" describing this money-saving service. Or call the Reynolds Office listed under "Aluminum" in your classified telephone directory. Reynolds Metals Company, Parts Division, 2085 South Ninth Street, Louisville 1, Kentucky.

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Reynolds files show that a refrigerator part generating 43% scrap is fabricated and delivered by Reynolds at a saving of 4.5% per unit, under the customer's former cost!

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## TAXES

### Tax Bill Joker

House proposals would set up a progressive rate schedule for corporations, pave the way for big boosts in the future.

The tax bill the House passed last week has a joker in it. Eventually, it could cost business a lot more than the \$500-million in new taxes for next year.

The joker is a basic change in the principle behind the corporate income tax. At first glance, the change seems slight. And it is sugar-coated with tax relief for small corporations.

• **Foot-in-the-Door**—But the change is also a foot-in-the-door for the idea of levying progressive taxes on corporations comparable to the progressive taxes on individual incomes. It would give any Congress hostile to business a tool for soaking big corporations.

On the surface, here's all the House bill does to corporate income taxes:

**Abolishes** the old graduated rates on income up to \$25,000—21% on the first \$5,000; 23% on the next \$15,000, and 25% on the next \$5,000.

**Eliminates** the extra-high "notch" rate of 53% on income between \$25,000 and \$50,000.

**Substitutes** a normal tax of 21% on all income, plus a 20% surtax on income above \$25,000.

But taken together, these changes would set up a brand-new schedule of rates for corporate taxes. And the rates would be progressive; that is, the rates would increase as income increases. The top rate in the schedule would be 41% (21% normal tax plus 20% surtax) instead of 38% as the present law provides. In short, the big difference between the House proposal and the present law is that this top rate would apply only to the larger corporate incomes—not to all (with special provision for small companies) as it does now.

Here is how corporation income taxes under the House proposals would compare with the present law:

For Net Incomes of	Current Law	House Bill
\$5,000 or less.....	\$1,050	\$1,050
20,000.....	4,500	4,200
25,000.....	5,750	5,250
50,000.....	19,000	15,500
100,000.....	38,000	36,000
150,000.....	57,000	56,500
166,667.....	63,333	63,333
200,000.....	76,000	77,000
500,000.....	190,000	200,000
1,000,000.....	380,000	405,000
5,000,000.....	1,900,000	2,045,000
10,000,000.....	3,800,000	4,095,000

In effect, the House bill moves away from the principle that all corporations

pay the same 38% tax regardless of income—with special treatment for small companies. It makes a start at least toward a system in which corporate taxes are geared to ability to pay and the sole standard of ability is size of income.

• **Cuts for the Little Man**—Ways & Means Committee members realized this when they drafted the bill. But they didn't advertise it. Instead, they represented the changes as tax relief, plus an extra levy on the big companies to make up lost revenue.

The House bill gives a \$300-million-a-year break to some 190,000 corporations with incomes of less than \$167,000. Some 160,000 companies would pay the same tax under the House bill that they do now. Only 25,000 of the big corporations pay more—but over \$700-million more. So, on balance, then, the bill might be expected to pick up more votes than it loses.

• **Raises for the Big**—Another Congress might some day carry these "soak-the-big" tactics much further—load up big corporations with additional taxes while leaving the little outfits alone. All Congress would have to do to create such a selective tax rise would be to add another surtax bracket to the two listed in the House bill. A 10% surtax on income over, say, \$200,000 would do the job nicely.

And, after the principle is established, there's no need to stop there. Once the tax writers adopted ability-to-pay in individual income taxes, they began pyramiding surtaxes, one on top of another. Today, the top surtax rate is 88%.

## TAX BRIEFS

**The copper import tariff**—suspended by Congress during the war—went back into effect last week. It will add 2¢ a lb. to the price of foreign metal coming into the U.S. market unless Congress suspends it again.

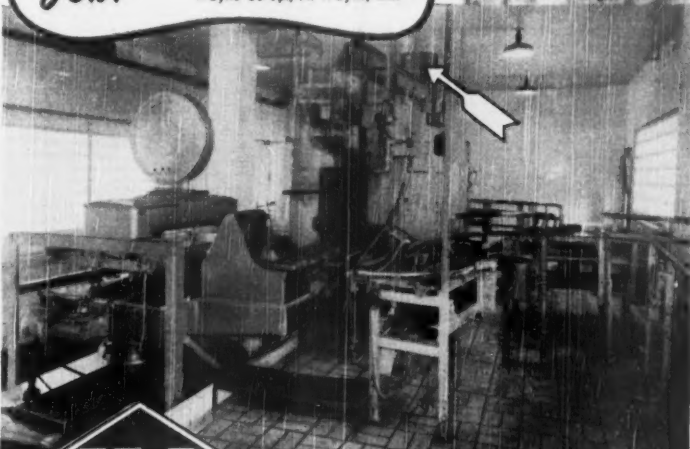
**State fines** imposed on truckers for overloading vehicles are deductible as business expenses. The Bureau of Internal Revenue says such fines are really necessary payments for the privilege of carrying excessive loads.

**Slot machines** are liable for a \$100 assessment, says Louisiana Supreme Court, although gambling is illegal in the state. Mississippi courts took the same attitude six years ago when they upheld taxes on liquor despite state prohibition (BW—Oct. 14 '44, p. 20).

**Commissions** paid for oil or gas leases are capital expenditures, not business expenses, said Tax Court recently.

*"Removes clouds of steam...does a fine job!"*

K. L. Stickler, Gen'l Mgr.  
Wayne Co-op., Ft. Wayne, Ind.



## VENTILATION

Billowing clouds of steam rising from large milk can washers and sterilizers are rapidly removed from this Wayne Co-op. building with a new ILG "PRV" model power roof ventilator. Objectionable moisture and excessive heat are driven out with the steam, leaving a clear, clean, air-cooled atmosphere for employees. New "PRV" models are designed for efficient, trouble-free exhaust from duct systems or vertical flues in multi-story buildings. Special new features have been developed to make these units easy to install, simple to service, weather-proof and long lasting. Send coupon or phone your nearby Branch Office (consult classified directory) for complete details on this remarkable new product!



New ILG "PRV" model power roof ventilator (centrifugal fan type) now available in ten sizes to operate against resistances from  $\frac{1}{4}$ " to  $1\frac{1}{2}$ ".

**FREE! Data on new "PRV" model Power Roof Ventilator...send coupon**

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☐ Rush data and prices on new "PRV" model

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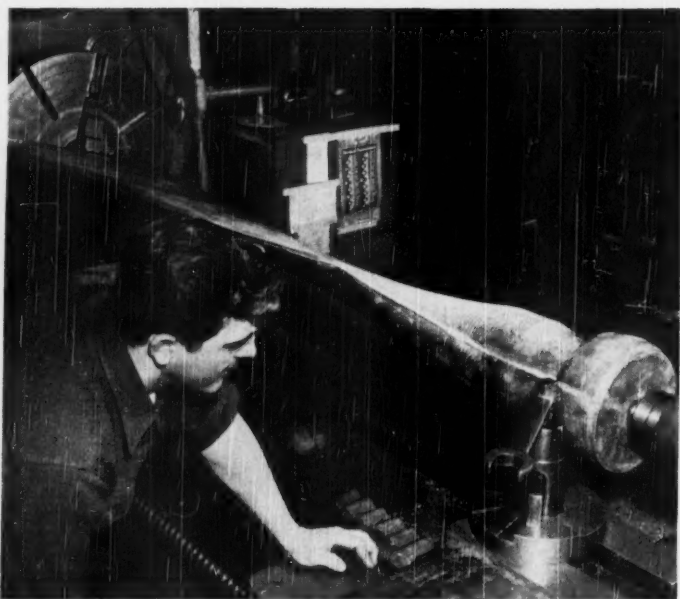
Whenever you need the personal service of an adhesive specialist, a Fuller man's ready to come a'running. Call on him when you have special problems. Invite him to double-check the adhesives you're using. Maybe he can recommend some money-saving improvements.



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## CAMERA VISITS INDUSTRY

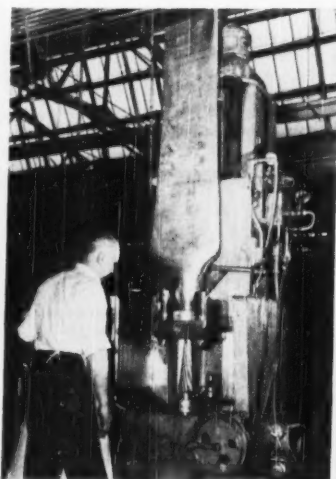


ROUGH forging for aluminum alloy propeller blade gets close machining. One of 100 on order at Hamilton Standard, it will drive air at supersonic speeds in a wind tunnel.

### Hamilton Spins a Wind Tunnel Prop

Hamilton Standard builds 100 big aluminum alloy blades for California and New York wind tunnels. It's precision work.

(TURN TO PAGE 76)

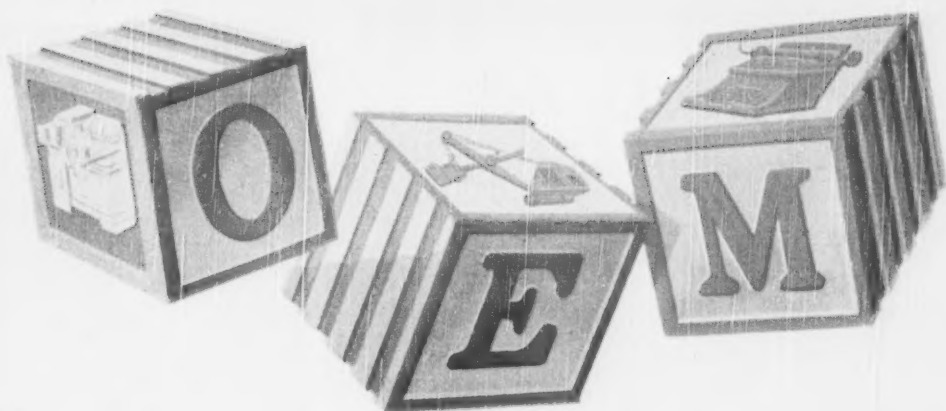


TAPER BORE eats out a deep, conical hole in shank of blade to lighten weight.



TEMPLATES check close tolerances in curves of airfoil. Grinding corrects.





# first letters in your sales alphabet

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*Clip this  
coupon for  
EXTRA  
DIVIDENDS*

Name .....  
Title .....  
Company .....  
Address .....  
City & State .....

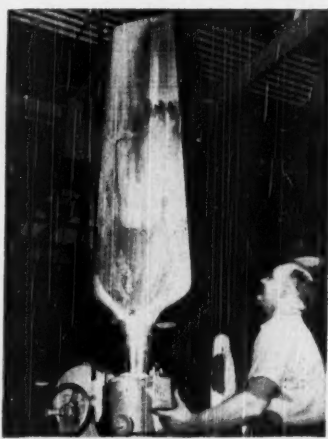
**PAYLOADER Sizes:** ☐ 12 cu. ft. ☐ ½ yd. ☐ ¾ yd. ☐ 1¼ yd. ☐ 1½ yd.



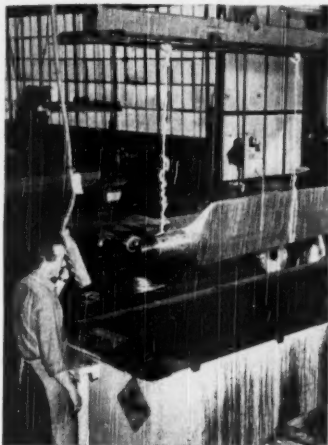
**PAYLOADER®**  
Manufactured by THE FRANK G. HOUGH CO.



**TUNNEL** (continued from page 74)



**BALANCE** must be perfect. Here 200-lb. blade is checked for vertical balance.

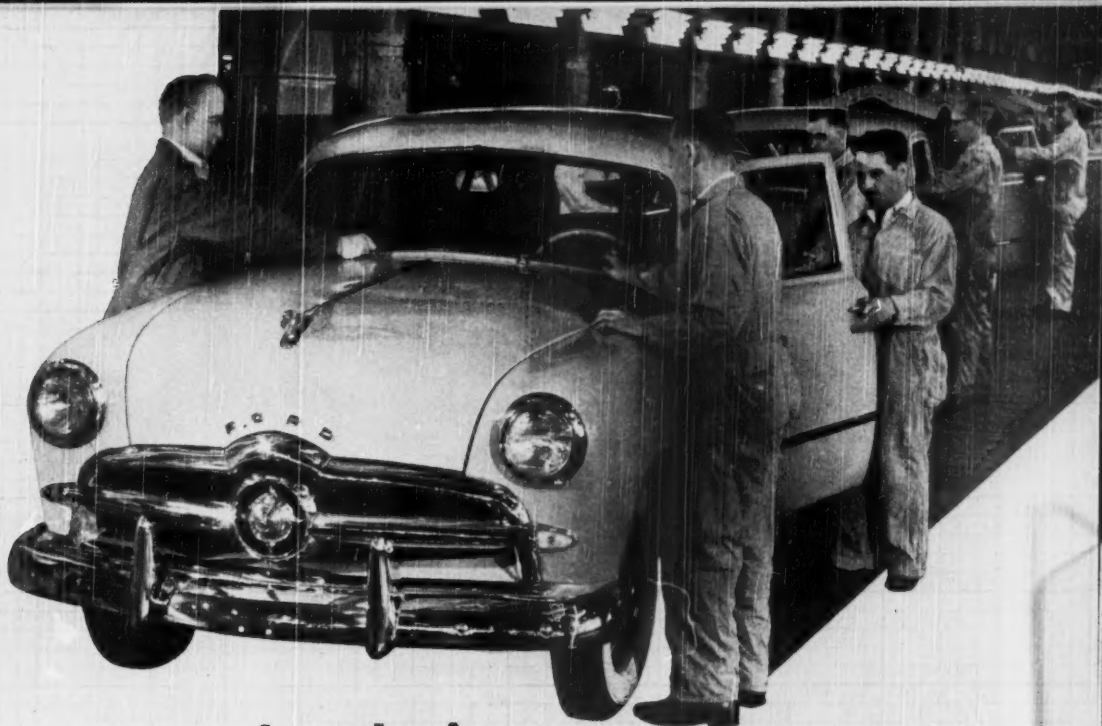


**FINISH** on blade is protected by oxidizing aluminum surface in electrolytic bath.

## Wind Paddles

Wind tunnels—not superbombers—will be powered by the giant, square-tipped propeller blades in these pictures. Hamilton Standard Division of United Aircraft Corp. is making 100 of them at its plant in East Hartford, Conn. Sixty of the blades will be sent to the Southern California Cooperative Wind Tunnel at Pasadena. The other 40 blades are being delivered to the Cornell Aeronautics Laboratory at Buffalo, N. Y.

Though the blades are only 6-ft. 9-in. long, they weigh 200 lb. At the wind tunnels, 16 of them will make a fan 22-ft. in diameter. And two fans, counter-rotating, will whip up supersonic gales.



**to speed production**

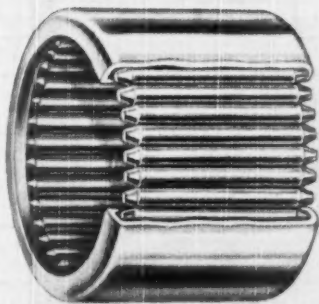
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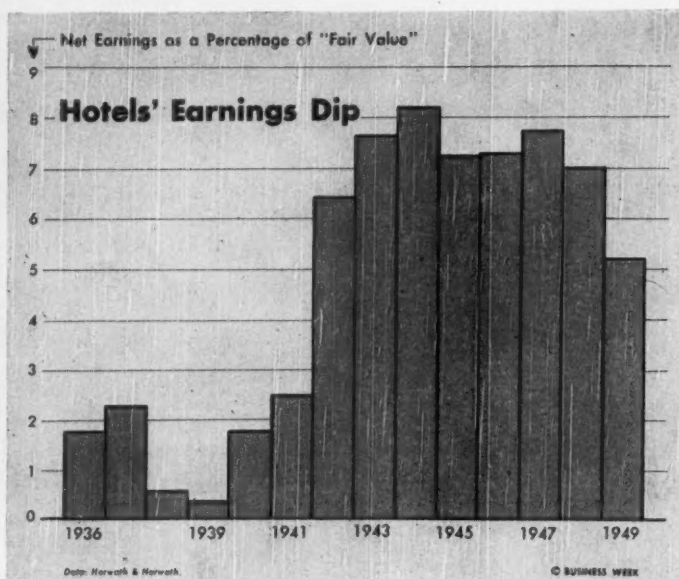
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# FINANCE



HOTEL 1949 EARNINGS were at their lowest point in eight years—though still way above the hard-pressed 30's and prewar years. To find its "fair value," a hotel multiplies its real-estate taxes by 40, then adds the present value of furniture and equipment.

## Hotel Business: Down, Not Out

Operating costs are up; room occupancy ratios are down. Even boosted rates weren't enough to pull up revenues last year. Despite this, Statler is building a big new hostelry in Los Angeles.

Hotel men last week wore the look of school boys glued to cheerless but required reading. According to their textbook, hotels earned less in 1949 than in any year since 1941.

The text was "Hotel Operations in 1949," put out by Horwath & Horwath, accounting firm that helps the industry keep its complicated finances straight.

The new report covers 100 typical U.S. hotels in 52 cities. It shows that net income of the hotels surveyed had dropped in 1949 to 5.26% of their "fair value" (chart, above). It had been 7.01% in 1948, 7.7% in 1947, and over 8% in 1944, the best war year.

• **Unoccupied**—Every year since the war, hotel operating costs—in which payrolls are a major item—have gone up. The all-important room-occupancy ratios have gone down. And rooms are the average hotel's principal source of revenue. Other retailers can slash prices and get something back on unsold goods. But every day a room is empty is a day's revenue lost for good.

Room occupancy reached a peak of 93% in 1946. It dropped steadily to 82% in 1949. And it hovered about at that level during the first four months of 1950.

Formerly, hotels had been able to boost their total revenue from room sales by boosting their rates. Last year, this didn't work. They raised rates, but dollarwise, room sales fell 1% below 1948. Total hotel sales, which include all hotel revenue except store rentals, fell 3%. For both figures, this was the first drop since 1938.

This trend has continued into 1950. Through the end of April, both total hotel sales and room sales were off 2% below the same 1949 period. Liquor sales slipped the most; they were off 5%. Detroit and Pacific Coast hotels showed the worst drop—6%. New York, Philadelphia, and Texas suffered the least, with a 1% dip.

• **Competition**—What's happened? Hotel men don't talk about it much. But one of the least popular words in their vocabulary right now is "motel." More



and more people are traveling by car, and competition from the motels gets sharper and sharper. Motels have advantages for the motorist. They're convenient, sometimes cheaper.

• **Unworried Man**—Not all hotel owners are worried, though. As if in challenge to the situation, Hotels Statler Co., Inc., one of the biggest chains, this week started a 1,375-room hotel with adjoining office building in downtown Los Angeles. The whole project will cost \$20-million. The hotel itself will cost \$12,000 or \$13,000 a room.

Few hotels of this size have gone up in the last 20 years. Too many were built in the 20's, ran into trouble in the 30's.

The only two big commercial hotels built since the war haven't had any really spectacular success. Glenn McCarthy's Hotel Shamrock in Houston is believed to have brought very little profit—if any—to the Texas oil man so far. Cincinnati's Terrace Plaza—the hotel on top of an office building (BW-Jul.3'48,p22)—lost a little money last year, is about breaking even now.

• **How Statler Figures**—But Arthur F. Douglas, Statler's president, figures that the adjoining office building will help keep his rooms, restaurants, and stores full. The hotel itself will have 75,000 sq. ft. of store space—an unusually high proportion. The office building will have 150,000 sq. ft. of rentable space. He expects Los Angeles to keep on growing fast.

Other hotel men are a bit skeptical. They think that building costs are so stiff that the project may be risky.

• **Bad for Big Ones**—As a matter of fact, Horwath & Horwath's 1949 figures are a bit discouraging for big hotels that can't count on large nonhotel rentals. They show that "house profits"—operating income from hotel operations, not counting store and office rentals—dropped faster for big hotels than they did for smaller ones.

Meantime, Douglas feels that hotels in some of the smaller cities have aged to the point where it would be uneconomical to modernize them. That leaves room for some new ones.

• **Competition in Dollars**—So Statler is planning an 800-room hotel in Dallas. A group of Dallas businessmen, headed by Fred Florence, president of Republic National Bank (BW-Feb.25'50,p100), expects to loan the chain \$1.5-million to build it.

Apparently, other hotel men share Douglas' view. As soon as the Statler plan was announced, Ernest Henderson, president of Sheraton Corp. of America (BW-Feb.4'50,p72) offered to build a 650-room hotel and find his own money if Dallas liked his proposition better. Meanwhile, one of Dallas' leading hotels, the Adolphus, is increasing its 825 rooms to 1,375.

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*For full description of the Conference Desk, write Art Metal Construction Company, Jamestown, N. Y., for illustrated folder.*

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President

June 20, 1950

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## Aluminum War Baby Grows Up

Reynolds Metals started with aluminum foil. Then the war—and government aid—gave it control of a third of U.S. basic production. There are debts to be paid; but the future looks good.

At the start of World War II, there was just one basic aluminum producer in the U. S.: Aluminum Co. of America. When the dust settled, there were three. The newcomers: Reynolds Metals Co. and Permanente Metals Corp. (now Kaiser Aluminum & Chemical Corp.).

• **Competitors**—Reynolds had been in the aluminum fabricating business for years before the war. But it only started making aluminum ingots in 1941. The heavy wartime demand for aluminum was one reason for the spread to basic production. But even more important to the growth of both Reynolds and Kaiser Aluminum was the government's wish to stir up some competition for Alcoa. It was a \$46-million loan from Reconstruction Finance Corp., for instance, that financed Reynolds' entry into basic production.

It had the desired effect. Reynolds now controls about a third of the country's basic production capacity. Last year, its total sales were about \$132-million; Alcoa's were \$347-million.

• **Fast Starter**—Reynolds' growth during the past 20 years has been phenomenal (table, below). It really got started back in 1918 when R. S. Reynolds, Sr., nephew of the late R. J. Reynolds, developed a foil package while he was an executive of the R. J. Reynolds Tobacco Co. He set up U. S. Foil Co. with R. J. Reynolds' backing to make lead and tin foil wraps for cigarette packages.

Reynolds later added aluminum foil to his line, and in 1928 he formed Reynolds Metals Co. to work primarily with aluminum packaging materials.

The company passed an important milestone in 1938 when it stepped from foil to fabrication, started rolling aluminum sheet and making rod and extrusions.

• **Father to Son**—When founder Richard S. Reynolds, Sr., became chairman of the board of Reynolds Metals in 1948, his son, Richard S. Reynolds, Jr., (cover) took over as president. Now

42, Dick Reynolds is alert for opportunities to expand his company's share of the growing aluminum business.

Just last week, Reynolds bought stock control of Southern States Roofing Co., a large independent distributor with 13 branches through the southeastern U. S. Already a veteran distributor of metal roofing, Southern now will plug a variety of Reynolds products.

Young Reynolds knows that government favor has done a lot to help his company grow. But he's under no illusions about the permanence of this favor. He still relies on the initiative and research which built his company from a one-product enterprise to the point where its major divisions now make and sell about 100 different products.

• **Plenty of Debt**—If a long slump were to come along, Reynolds thinks his company might have a rough time of it. Reynolds has about \$93-million in long-term debt outstanding, a sizable chunk of which comes due within the next 10 years. The company also has to pay off about \$11-million in short-term debt this year.

Reynolds is now paying back \$1.5-million a year on its original \$46-million RFC loan at 4%. The whole loan must be paid off by 1960 when a final lump-sum payment of \$15.7-million is due. In 1951, Reynolds starts retiring \$53-million borrowed at 4% from the government to pay for war-surplus plants (BW—Sep. 3'49, p. 26). And from this year through 1954, the company is scheduled to retire annually \$2.1-million in noninterest-bearing notes that the government took for the war plant purchase.

• **Integration**—Most of this borrowed capital has gone towards integrating Reynolds Metals' operations, all the way from the mineral deposit to the finished product. As soon as government-built aluminum plants were declared surplus, Reynolds latched on to

### Reynold's Story: Boom to War to Boom

	Current Assets	Plant, etc.	Total Assets	Current Debts	Long-term Debt	Net Worth	Sales	Net Profits
	(In Thousands of Dollars)							
Dec. 31, '29...	\$4,486	\$5,770	\$12,857	\$1,091	None	\$9,741	\$12,917	\$3,560
Dec. 31, '39...	8,829	9,037	23,627	4,429	\$948	18,053	20,496	1,527
Dec. 31, '49...	60,943	101,624	177,479	28,991	93,317	55,103	131,865	5,503

as many as possible, first by lease, later by purchase. For \$58-million, Reynolds got properties that cost the government about \$174-million to build.

To supply these plants—and to rid the company of dependence on Alcoa for raw material—Reynolds has bought up newly discovered bauxite deposits on the island of Jamaica. It expects to get a big output from these deposits within the next 18 months.

• **Refinancing**—With these new holdings, Reynolds thinks that it is set up, for the first time since the war, to start a refinancing job. To make the package more attractive, Reynolds' president is talking things over with RFC and with private bankers, hoping to spread the company's obligations out over a longer period and reduce interest rates as well.

One place President Reynolds is likely to go for financing is the Wall Street investment house of Reynolds & Co. Reynolds was a partner there from 1930 to 1938. The house was originally set up by the Reynolds family to market securities of R. J. Reynolds Tobacco Co.

• **Big Market**—But the marketing front for his products is Reynolds' immediate concern right now. More and more uses for aluminum are cropping up—in the auto industry, in aviation (new types of aluminum extrusions for airframes), in the construction field, and in containers. Reynolds estimates that 17,000 companies are making their products out of his.

• **Big Competitor**—The competitor that gives Reynolds the toughest run for this market is not in the U.S. at all; it's Aluminum Co. of Canada. Getting cheap power from the tremendous Ship-saw power development (a war project partly financed by the U.S.), Alcan is able to undersell American producers on their home ground. Currently, almost 25% of aluminum consumed in the U.S. is imported from Canada.

To take the sting out of this competition, Reynolds is urging a hike in the present import duty on Canadian aluminum. The duty is now 2¢ a lb. on ingots, 3¢ a lb. on fabricated metal. Reynolds would like to raise that to 4½¢ and 7¢, respectively. He figures that would put American-made aluminum on an equal competitive footing with the Canadian product.

## New Prudent Man Law Spurs Common Trusts

The common trust fund has begun to catch on in New York after a slow start. The first one in a New York bank was set up in 1945; at the beginning of this year, there were only 12. But by this week, there were 25.

A common trust mingles funds of a number of small individual trusts. This



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allows the trustee to arrange more broadly diversified investments. And from the bank's point of view, it's cheaper to handle one trust than a lot of separate ones.

• **"Prudent Man"**—The reason for the sudden spurt of common trusts this year seems to be the new "prudent man" law for New York trustees (BW—Apr. 1 '50, p82). Before this year, most common trusts gave their trustees complete discretionary powers in choosing investments; trusts in which investments were restricted to the "legal list" were scarcer. But after July 1, the new law empowers those trustees who were formerly restricted to investing in the legal list to put 35% of their trust funds in common stock. The result was to give this type of trust a boost; nine of the 13 common trusts that have been formed this year are of the legal-list type.

The new leeway in investing makes the legal-list common trust attractive to banks. Many of the individual legal-list trusts they administer are too small to get much diversification in common stocks with the 35% ceiling. So to get a larger amount to invest in common stocks, banks are trying to assemble these small trusts into common trusts. They can do that unless specifically blocked by the terms of the trust—which isn't usually the case.

• **Pennsylvania Ahead**—Now William A. Lyon, New York banking superintendent, estimates that common trust funds in the state have assets of over \$50-million. By the end of the year, he figures, these assets might reach \$100-million. Even so, they are still a long way behind Pennsylvania's common trusts, which had about \$220-million early this year. Common trusts have been in operation in Pennsylvania longer than in New York.

New York discretionary funds are now yielding an average of under 4%, according to Lyon. Legal-list funds now yield about 2.6%, on the average. Lyon thinks this may go up about one-third after the new law has been in effect awhile.

## Railroads Buy Signals On Easy-Payment Plan

Railroads can now buy signal systems the same way you buy a refrigerator—so much down, and so much a month. The down-payment plan was announced last week by General Railway Signal Co. The idea is old stuff to consumers but a brand-new departure in railroad financing.

Under the GRS plan, the railroad makes a down payment of, say, 20% on its signal equipment. A bank puts up the rest. Then the railroad repays the bank in instalments over a five-



year period. The New York Central has already signed contracts with GRS covering three signal projects on these terms.

• **Different Story**—For years, carriers have been buying their rolling stock on the easy-payment plan—making a down payment of about 20% and issuing equipment trust certificates for the rest. It has been easy to raise capital on these certificates because rolling stock is easily interchangeable—and therefore fairly easy to sell. If a railroad should waver on its agreement or go bankrupt, whoever held certificates would get most of his money back by selling or renting the cars to another railroad.

Signal equipment is different. Signal systems are part of the railroad plant. Often they come under the mortgage bond issues of the railroad. In bankruptcy, bondholders would have first claim on signal equipment, ahead of anyone who had loaned money on the equipment.

• **Lender Keeps Title**—Under the GRS time-payment plan, the lender keeps title to the signal equipment until his loan is paid off. That way, the equipment doesn't come under the mortgage bonds until it becomes the railroad's property.

GRS has already sold several banks on the idea of financing railroad purchases under its plan. It argues that lenders are well protected. In the New York Central deal, for instance, each signal installation is expected to save the road far more in operating costs than the loan payments involved.

## FINANCE BRIEFS

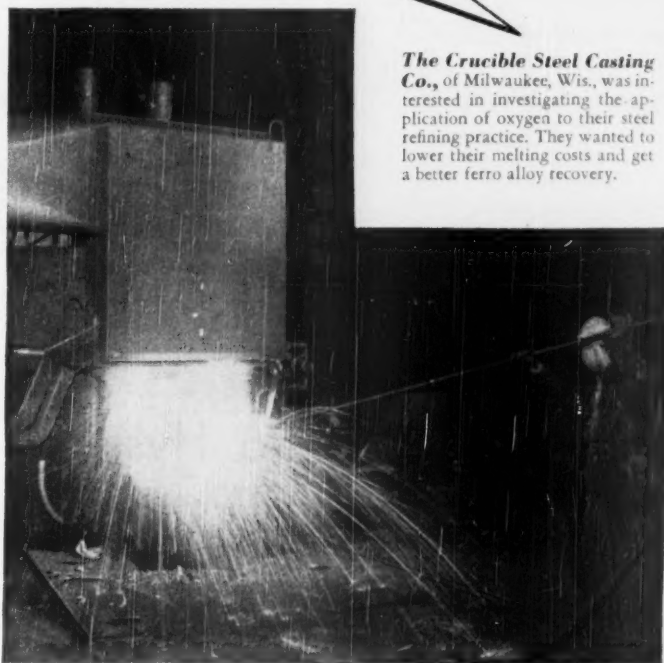
**Chicago Transit Authority** (BW—Jul. 1'50,p56) has just sold \$11-million one-to-six-year 4% equipment trust certificates to John Nuveen & Co., Chicago investment house. With proceeds and \$5.5-million from depreciation reserves, CTA will buy 200 el cars, 500 buses. This is virtually the same deal RFC turned down two weeks ago.

• **Poor & Co.**, rail equipment maker, has bought Pioneer Engineering Works, Inc., Minneapolis road-building machinery maker for undisclosed sum of cash, plus proceeds of \$2-million privately sold serial debentures.

• **The rate boost drive** of Bell System subsidiaries hasn't done too badly. Since September, 1946, rate increases requested totaled \$621-million; \$394-million have already been granted.

• **Four supermarkets** of Food Fair Stores, Inc., have been sold to John Hancock Mutual Life Insurance Co. and leased back. Similar deals are expected soon.

## Oxygen Refining lowers melting cost... permits better ferro alloy recovery... improves refractory life



**The Crucible Steel Casting Co.**, of Milwaukee, Wis., was interested in investigating the application of oxygen to their steel refining practice. They wanted to lower their melting costs and get a better ferro alloy recovery.

**Clarence Nolan**, Airco Technical Sales Supervisor, was called in to demonstrate the use of oxygen in refining acid steel. On his advice, a number of test heats were made in which Airco 99.5% pure oxygen was injected into the molten bath. These tests proved that substantial savings in heat time and power could be realized by adopting this method of refining. When the operation was put in general practice, it was found that in addition to the above savings, it

offered better metal analysis control, improved refractory life and further savings through higher recovery of ferro alloys.

Additional savings were also enjoyed when the problem of handling and storing iron ore was eliminated.

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## THE MARKETS

### What the Korean Crisis Did to Commodities

	Postwar High	1950 High	1950 Low	Pre- Korea	Latest Price
Burlap (yd.)	\$ .224	\$ .192	\$ .162	\$ .164	\$ .169
Cocoa (lb.)	.52 1/2	.32 1/2	.22	.32 1/2	.32 1/2
Coffee (lb.)	.51	.50	.46	.48 1/2	.51
Copper (lb.)	.23 1/2	.22 1/2	.18 1/2	.22 1/2	.22 1/2
Corn (bu.)	2.80	1.51	1.28	1.51	1.51
Cotton (lb.)	.364	.34	.31	.338	.34
Cottonseed oil (lb.)	.35 1/2	.172	.128	.154	.14
Hides (lb.)	.36 1/2	.258	.23	.258	.26
Hogs (cwt.)	31.20	20.52 1/2	15.75	20.25	20.50
Lard (lb.)	.29	.126	.104	.109	.119
Lead (lb.)	.21 1/2	.12	.10 1/2	.11 1/2	.11
Print cloth (yd.)	.282	.17	.13 1/2	.152	.15 1/2
Rubber (lb.)	.34	.34	.181	.282	.31
Steel scrap (ton)	41.75	39.00	27.00	37.50	37.50
Steers (cwt.)	36.62 1/2	31.50	27.50	29.25	31.00
Sugar (lb.)	.061	.058	.0548	.058	.058
Tallow (lb.)	.27 1/2	.07	.048	.048	.05
Tin (lb.)	1.03	.78	.741	.764	.794
Wheat (bu.)	3.11 1/2	2.30 1/2	2.11 1/4	2.11 1/4	2.20
Wool (lb.)	2.08	2.08	1.75	2.00	2.08
Zinc (lb.)	.18	.15	.10	.15	.15

## No Hysteria on Commodities

Spot-market prices run firm to strong on news of U.S. intervention in Korea. Farm products and imported commodities take the lead with high civilian and military demand. But metals lag.

Prices of basic raw materials greeted the Korean crisis somewhat as they did the outbreak of war in Europe in 1939—initial strength followed by a good deal of hesitancy.

However, the underlying tone of these spot markets unquestionably is strong.

**Civilian demand** is high. Most raw materials were being used about as rapidly as produced even before shooting started in Korea. Now people are buying for fear of later scarcities. That raises commodity needs still further.

**Military demand** is likely to increase. That reduces the danger usually inherent in building inventories. If demand and prices are to rise, shelf stocks are as good as money in the bank.

**Farm products**, in surplus a few days ago, now look like worthwhile reserves. We would have run desperately short of food and fiber between 1941 and 1945 had it not been for the prewar surpluses.

**Imported-commodity** prices have firmed. This reflects the chance that the sea lanes may become risky—or that ships will be diverted from bringing

in things like coffee and cocoa to carrying out troops, tanks, ammunition, and rationing.

That, in brief, is the background against which commodity trading has been carried on these last two weeks. The fact that even Washington doesn't seem to know how to appraise the Korean situation has kept traders cautious. The markets haven't been frantic. Price movements have been restrained. But buying has been generally predominant.

Purchasing agents have been in a mood for some time to increase stocks of raw materials, particularly metals—where it has been possible to do so. Now they are more than ever in a buying mood.

Traders, for their part, came back from the long Fourth of July holiday inclined to add to their lines. That was demonstrated right at the opening on Wednesday. Prices of most commodities were bid up right from the start. Some of the gains were fairly substantial.

• **Metals Lag**—Interestingly enough, producers of major metals used by in-

dustry were slow to follow the advance. The price of lead, in fact, declined again just after President Truman announced American policy (BW-Jul.1 '50,p9). But there was no ignoring the fact that trading in futures registered traders' bets that metals will move higher—including lead.

In tin, the dearest of all base metals, producers don't exercise the control they have in copper, lead, zinc, and aluminum. Tin has been advancing. Uncertainty of Far Eastern output and transportation undoubtedly contributed to its strength.

Rubber's position is much like that of tin. Communist activities in Far Eastern areas endanger the supply of natural rubber. Prices have resumed the rise interrupted earlier in June.

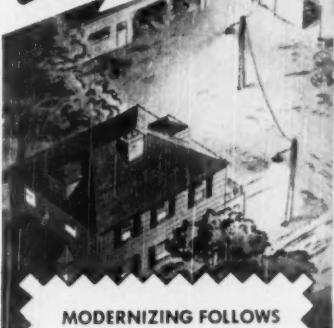
Wool, coffee, and cocoa have conformed to the rising price pattern for imported commodities.

• **Farm Records**—On the home front, farm prices have joined in, too. Cotton has been nudging the year's highs and corn has set new ones. Wheat, weak earlier, has firmed. Steers and hogs have been commanding prices at or near their earlier highs for 1950.

## What Korea Did to the Bull Market

	June 1949	1949-50 Bull Market Low	June 29, 1950 High	Bull Market Maximum To Date	Gains At Present
<b>Industrial Common Stocks</b>					
Dow-Jones Average.....	161.00	228.38	206.72	+41.9%	+28.4%
Allied Chemical & Dye.....	\$165.00	\$250.50	\$230.00	+55.5	+39.4
American Can.....	88.12	120.37	106.00	+36.6	+20.3
American Smelting & Refining.....	39.25	57.37	50.75	+46.2	+29.3
American Tobacco.....	65.50	76.50	65.25	+16.8	+0.4
Anaconda Copper.....	25.12	33.75	29.00	+34.4	+15.4
Armstrong Cork.....	38.62	53.00	48.50	+37.2	+25.6
Bethlehem Steel.....	23.12	39.37	34.12	+70.3	+47.6
Chrysler Corp.....	44.12	81.00	70.12	+83.6	+58.9
E. I. du Pont de Nemours.....	43.25	85.37	73.50	+97.4	+69.9
General Electric.....	34.00	50.50	44.25	+48.5	+30.1
General Foods.....	40.75	51.75	49.50	+27.0	+21.5
General Motors.....	51.87	99.12	85.50	+91.1	+64.8
Gimbel Brothers.....	12.25	18.37	16.12	+50.0	+31.6
B. F. Goodrich.....	52.50	98.75	86.75	+88.1	+65.2
Gulf Oil.....	56.75	72.25	66.00	+27.3	+16.3
International Harvester.....	22.75	29.75	25.25	+30.8	+11.0
Johns-Manville.....	30.50	51.50	43.25	+68.9	+41.8
Kennecott Copper.....	44.00	58.87	54.00	+33.8	+22.7
Loew's, Inc.....	16.12	18.75	15.12	+16.3	+6.2
National Steel.....	24.50	41.87	36.50	+70.9	+49.0
Pacific Mills.....	27.12	35.00	31.25	+29.1	+15.2
Radio Corp.....	9.62	23.25	18.00	+141.7	+87.1
Sears, Roebuck & Co.....	33.87	48.50	43.12	+43.2	+27.3
E. R. Squibb.....	27.00	40.00	34.00	+48.1	+25.9
Standard Oil (N. J.).....	60.25	80.00	72.00	+32.8	+19.5
Studebaker Corp.....	16.75	35.37	28.75	+111.2	+71.6
Swift & Co.....	27.62	37.75	33.50	+36.7	+21.3
Union Carbide & Carbon.....	33.75	51.00	45.00	+51.1	+33.3
United Fruit.....	44.25	65.37	59.25	+47.7	+33.9
United States Rubber.....	33.00	47.25	38.75	+43.2	+17.4
United States Steel.....	20.25	37.00	32.00	+82.7	+58.0
Westinghouse Electric.....	20.75	36.00	30.12	+73.5	+45.2
F. W. Woolworth.....	45.75	51.00	46.50	+11.5	+1.6
Zenith Radio.....	21.00	70.25	53.50	+234.5	+154.8
<b>Railroad Common Stocks</b>					
Dow-Jones Average.....	41.03	56.96	51.24	+38.9	+24.9
Atchafalpa, Topeka & Santa Fe.....	\$80.00	\$121.75	\$108.75	+52.2	+35.9
Atlantic Coast Line.....	32.50	48.75	44.00	+50.0	+35.4
Chesapeake & Ohio.....	29.75	32.37	25.50	+8.8	+14.3
Great Northern (Pfd.).....	33.25	44.25	33.00	+33.1	+0.8
Illinois Central.....	23.37	42.87	35.75	+83.4	+53.0
Louisville & Nashville.....	31.62	41.87	35.75	+32.4	+13.1
New York Central.....	9.25	15.00	11.75	+62.2	+27.0
New York, Chicago & St. Louis.....	56.00	111.00	93.00	+98.2	+66.1
Norfolk & Western.....	49.75	53.50	45.00	+7.5	+9.5
Northern Pacific.....	11.50	22.37	17.50	+94.5	+52.2
Pennsylvania.....	14.12	18.25	14.75	+29.2	+4.5
Southern Pacific.....	32.50	58.00	50.25	+78.5	+54.6
Southern Ry.....	25.12	38.75	33.25	+54.3	+32.4
Union Pacific.....	73.25	89.50	81.25	+22.2	+10.9

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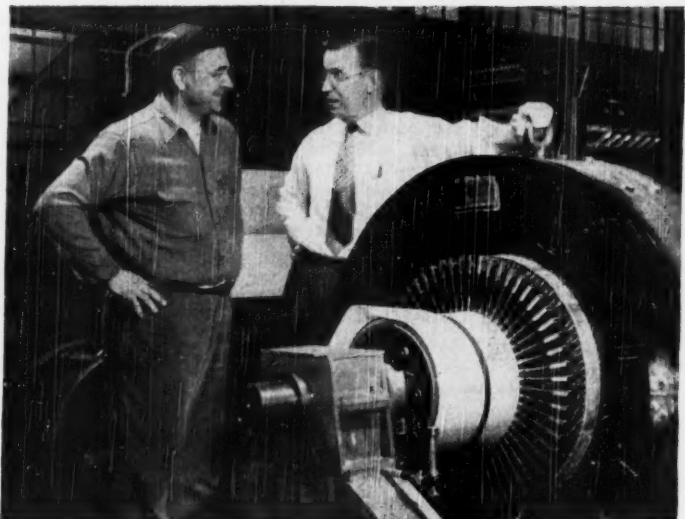
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## LABOR



CLOSE CONTACT between worker and management in these plants is the secret of . . .

### Labor Relations Made Profitable

Two companies approach union relations from different angles. But both Chase Candy and Electric Products come out ahead.

Is it possible to find some dollars-and-cents value in a union relationship?

Few employers ever have an affirmative answer to that poser. But all agree that finding such an answer has come to be a vital business problem.

After investigating two approaches toward making a union relationship profitable—which is something more than making it peaceful—BUSINESS WEEK can now report on two employers who have made at least a promising start.

At Chase Candy Co. in St. Louis, the union is the dominant influence in an employee program for more profitable production.

At Electric Products Co. in Cleveland, the individual employee is in the fore; his union plays a backstop role.

The two unions involved are markedly different: In St. Louis, a militant AFL group affiliated with the teamsters; in Cleveland, a CIO union with a background in the turbulent electrical-manufacturing industry.

Two things make them kin: First, a conviction that employees benefit when employers prosper; second, a belief that their employers have moved beyond a grudging live-and-let-live attitude toward unionism.

### I. Chase Candy Co. Recipe

In 1946, the Chase Candy Co. bought the former National Candy Co. plant in St. Louis. It planned to shift most of its operations there from its original plant in St. Joseph, Mo., and two plants in Chicago. The company had outgrown its old quarters; the new, modern building offered more space, better rail and shipping facilities.

Chase was operating the St. Louis plant two years later—but it hadn't been able to shut down the other units. Despite the many advantages of the new plant, production per employee was 13% to 15% less than in other Chase units.

• **Union Called In**—Cooks, candymakers, packers, shippers, maintenance men,



and others in the St. Louis plant held memberships in the United Distribution Workers—then an independent union. G. D. Belcher, Chase vice-president in charge of production, called in Harold J. Gibbons, chief administrative officer of the union.

He put his cards on the table. He was worried, he said, about inefficiency and waste. Unless it could be curbed, Chase would abandon the St. Louis plant. Everyone would suffer. Could the union help?

• **The Question**—Maybe, said Gibbons. The union would talk to every Chase employee, try to get answers to two key questions:

• What's wrong with the way things are being run at the Chase plant?

• What can be done to get more output per man or woman?

Gibbons delivered. He called in the employees, read a full company report on production problems—including losses from stolen candy and loafing on the job. Then he called for kicks and ideas. Full records were kept on both. At the end of each session, the union sent recommendations to Belcher.

• **Employees Speak**—Under an agreement with Gibbons, Belcher, weeded out the good ideas from the bad. He put into effect all that were practical and reported to the union why others couldn't be adopted.

Some employee suggestions:

• Work room is limited; aisles and loading platforms should be cleared.

• Equipment doesn't work right; an elevator operator has to open and close the door two or three times to make it catch.

• There aren't enough pairs of rubber gloves for workers handling steel drums of boiling water; it's not "loafing," like the company says, to stand around and wait for gloves.

• There's no apparent system for ordering supplies; sometimes sugar is delivered and there's no place to store it except in the aisles.

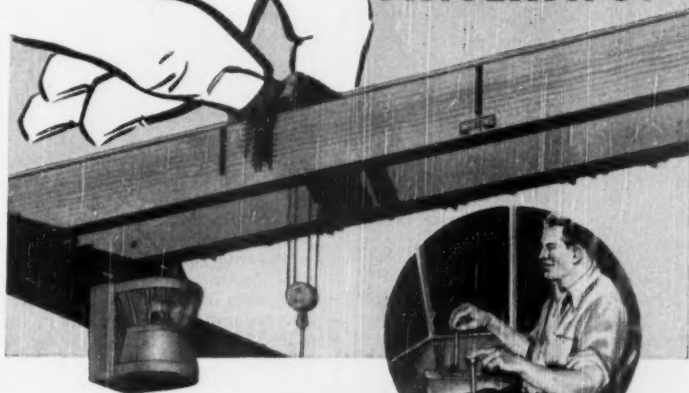
• One worker said she wasted one hour in eight looking for a stamper. Others said they lose "lots of time" because they have to go to the basement for sample boxes; there's no storage room for them in the packaging department. The washroom for this group was a block away, "and we have to wash up a lot, in packaging."

• There's too little lubrication and too many temporary repairs on machines, reported maintenance men; that's why there's a lot of scrap candy.

• Candy thefts? You can stop workers from breaking into cases for candy to eat, if you put out containers of scrap candy so everyone can help himself.

• **Output, Morale Up**—By adopting a lot of the ideas expressed, Belcher says, the company boosted per-worker output

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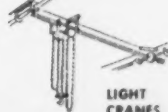
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substantially. And that was just the beginning. Worker morale shot up when employees realized the company was interested in what they thought. And calling in the union—instead of trying to step up output standards by fiat—has cemented good relations with the union.

For instance: Recently, the union, now in the teamsters, struck St. Louis warehouses, including one in which Chase had some badly needed raw materials. Belcher told Gibbons about it. The union opened its picket line for Chase trucks.

The union asked Chase for a raise last year. The company had lost money in 1948, and couldn't afford higher pay. Belcher turned over to the union full profit-and-loss statements, cost sheets, estimates of competitors' production costs, and other financial data. The union examined them thoroughly, asked some questions and got straight answers; then it agreed to sign a new contract at former wage rates.

• **Get-Togethers**—The exchange of information isn't haphazard. A company-union committee meets once a month to discuss mutual problems. It's made up of top-level personnel, able to act on the things discussed. As Belcher sees it, "You have to get results. If you just keep on having meetings, with nothing to show for them, pretty soon they [the union members] get fed up."

About once every two months, Belcher and other top Chase officers lunch with Gibbons and his top aides. It's partly a business lunch—to discuss

company and union affairs. But it's also intended to keep company and union men on free-and-easy terms—the idea is that if they know each other well enough, any disagreement that might arise will be hashed out in a friendly way, not left unsettled to be a potential troublemaker.

The two men most responsible for the current state of affairs at Chase in St. Louis are Belcher and Gibbons. The former started with the company 26 years ago, when he was 17; he worked his way up from the bottom, while taking night courses in engineering, personnel work, other subjects.

Gibbons started out in the field of WPA adult education, became a union organizer for CIO's textile workers in 1937, and in 1941, St. Louis director for CIO's department store union. He led the group out of CIO in protest against the international union's soft position on Communists, set up the United Distribution Workers. It went into AFL's teamsters in 1949.

• **"Sweetheart Contracts"**—Rival unions in St. Louis criticize Gibbons' union for working "too closely with the boss." They say its "sweetheart contracts" keep members from getting "all that's coming to them." Gibbons denies it, and points to two things: Chase wages and working conditions are well above average, so cooperation hasn't cost employees anything; other employers, who haven't found a formula for management-union cooperation, haven't found the union a "sweetheart" in any way—to them, it's as tough as any of them.

## II. Electric Products Co. Formula

Like Chase Candy's G. D. Belcher, Robert Berry, president of Electric Products Co., puts labor-management cooperation on the basis of complete frankness.

"We tell our employees everything," he says. "If there is any information about this company that our employees don't have, it's because we have overlooked it or because the employees haven't asked for it."

The no-secrets approach pays off. Berry is convinced, in higher morale among his 350 production workers—and in unusually high output per man.

• **No-Secrets Pays Off**—Here's the sort of way he works it: Recently, the company got an order from a big steel company for \$205,000 in plating equipment. In other companies, workers usually find out indirectly about such things; what it means to the company often is pure scuttlebutt. Not so at Electric Products.

The day after the order came in, Berry mailed a letter to every employee. He told them it took six years of sales effort to get the order. Even so, the

company's contract required that \$30,000 worth of electric motors—which the company wanted to make—had to be subcontracted. He explained that tooling up, materials, and ordinary running costs—including labor costs—would eat up most of the \$205,000. Profits, after taxes, would be \$12,400 on the order—or 6 1/4¢ from every dollar taken in.

The same information is kept posted on the plant bulletin boards—along with the schedule that must be maintained in the shops to fill the order on time, and progress reports on production.

Going into the facts and figures, in detail, prevents a lot of false ideas building up in labor-management relations, Berry says. That goes for company finances, business prospects, and the good and bad about the way plant productivity shapes up.

• **Information Channels**—Information is passed along in four channels: (1) by word of mouth, from members of a five-man management team to foremen and employees; (2) by personal letters from Berry mailed to employees' homes; (3) by informal gatherings in the shops

to discuss something special; and (4) through the employee magazine.

Employees are encouraged to ask questions. Few took advantage of the chance at first; now, no one hesitates. And it's a company rule that a question must be answered, or a valid reason given for not answering it.

• **Harmony**—The same kind of close relationship between company and workers is sought in all matters. The plant has been unionized since 1934. At that time, Maxwell Berry (founder of the company and father of Robert Berry) told employees if they wanted a union, he wouldn't oppose a "constructive and profitable" union relationship. Employees joined the United Electrical Workers (ex-CIO). They stayed in UE until it broke with CIO, then shifted to the new International Union of Electrical Workers (CIO).

Electric Products hasn't had a strike in its 16-year relationship with UE and IUE. Only three grievances have gone to arbitration in that period. Other companies have found the electrical unions troublesome. Why the difference? Berry believes the trouble usually doesn't stem from unions but from discontented, upset workers.

• **No Grievance Build-Up**—So Electric Products works through the workers to maintain good relations with the union. It doesn't let grievances build up. The rule is: Try and settle a beef at once, on the shop floor, in a friendly conference between foreman, shop steward, and aggrieved worker. If it can't be settled there and then, present it immediately to the plant steering committee.

This is made up of two company officials, two union officers, and the union editor of the company's employee magazine. All are right in the plant. If a grievance comes up that can't be settled on the plant floor, the committee assembles. Usually, a half-hour discussion settles the gripe—before it's magnified in plant-gate discussions.

In addition to handling the tougher grievances, the steering committee has jurisdiction over most company-union relations. The fact that the same, permanent group deals together on practically everything creates what the company considers to be a "helpful continuity" in relations.

Are meetings always peaceful? Not a bit of it, say company and union. "We have scraps, but there are darned few we can't settle quickly when we get all the facts."

• **Employee Magazine**—Unlike most companies, Electric Products doesn't think of its employee magazine as strictly from management. Editor Ted Kopman, who carries a union card, prints the union's side on an equal basis with management's. And he's given wide latitude in saying what he thinks to both management and union.

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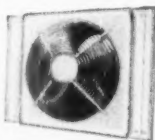


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Recently, the company was announced winner of General Electric's Charles A. Coffin medal for public service—becoming the first two-time winner in 28 years. Among the citations was one to the "exceptional loyalty and efficiency" of employees. To the utility, this was a direct tribute to

its successful apprenticeship program.

Washington Water Power's apprentices get on-the-job training. Linemen start out on practice poles and "safe" lines at one of the company's substations. Mechanics get shop practice in one of the company's repair works. The two groups work up, in easy stages, to real poles and hot wires, or to substations and then main powerplants.

It's a three-year stint before graduation from apprenticeship. During that time, apprentices can also take a parallel three-year course through the Spokane public-school system—not to speed apprenticeship, but to broaden its scope.

This course was set up two years ago





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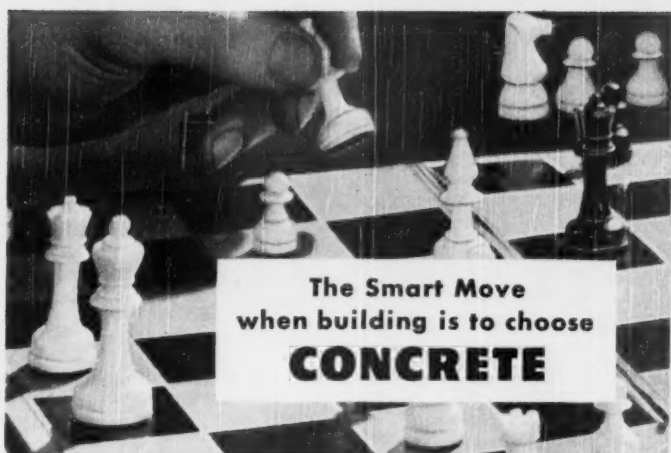
**ARMOUNTED FITTINGS** show him what's top of the pole. He doesn't have to climb.

## before the Job

with company, International Brotherhood of Electrical Workers (AFL), and school system cooperation. It's intended to add "know why" to "knowhow."

Once a month, on their own time, apprentices who want to can attend six hours of special classes on Saturday. School system teachers use standard electrical and electronics texts as a basis for lectures. They assign stiff schedules of paper work, to be done at home, and assign shop and field practice work to be done with the help of company teachers at odd times during the regular apprenticeship program.

So far, only two apprentices have turned down the outside schooling.



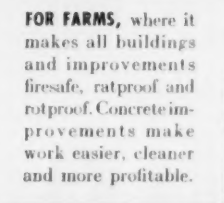
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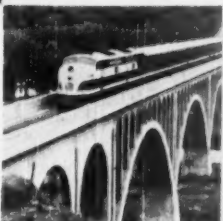
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### DIVIDEND ON COMMON STOCK

The Directors of Chrysler Corporation have declared a dividend of one dollar and seventy-five cents (\$1.75) per share on the outstanding common stock, payable September 12, 1950 to stockholders of record at the close of business August 14, 1950.

**B. E. HUTCHINSON**  
Chairman, Finance Committee



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## LABOR BRIEFS

Next UMW demand will be for a shorter work week (35 hours, as before 1941) at present wages. Recent Pittsburgh district convention stressed that demand, said little about higher tonnage royalties, or direct pay boosts. It usually tips off national UMW policy.

Labor leftists want the backing of a strong non-Communist union leader, have their eye on John L. Lewis. Recently, Lewis refused to address the leftist office workers (ex-CIO) convention but sent "good wishes." Since then, Communist Daily Worker has been urging "solidarity" under Lewis as "America's outstanding top labor leader."

"Not guilty" is verdict of UAW investigators who heard charges against Richard T. Gosser, union's Toledo director (BW-May 27 '50, p. 108). Despite the verdict, Gosser's still under fire in Toledo.

Sunburn causes an estimated loss of 7.5-million man-days of work every summer, says the magazine, Industrial Medicine. Monday and Tuesday are the worst days for sunburn absenteeism.

AFL-CIO unity in politics looks closer. Joseph Keenan, who heads AFL's Labor's League for Political Education, addressed CIO's Political Action Committee urging collaboration "to defeat our common enemies in 1950."

Union-shop pacts won't be challenged in construction, even if T-H election rules haven't been met, Robert Denham, NLRB general counsel, announced officially. NLRB doesn't agree (BW-Jun. 17 '50, p. 116), but only Denham can issue complaints.

Wage boosts averaged 4.3¢ an hour in a sampling of 387 settlements in New York State in the first quarter of 1950. Pay hikes showed up in 60% of the agreements. Pensions, etc., added to labor costs in 58% of contracts which upped pay, 70% of those that didn't.

Union lost \$224,575 in net worth in six-week nationwide steel strike last fall. CIO steel union's financial report for the last half of 1949 shows that drop to an \$8,561,624 balance.

Building-trades pact in New York City area extends a no-strike policy three more years. It also "stabilizes" wage rates until mid-1953 with raises of up to 25¢ an hour now, no more hikes unless BLS' c-o-f-l figures for New York go up 10%. The pact covers 700

### Double Trouble

One strike at a time is enough for any employer. But for two hours last week, a Plainfield, N. J., hat manufacturer had two at once. It happened this way:

About half of the employees of Bronston Hat Co. and its affiliate, Charles Headwear, Inc., struck four months ago to get recognition for their AFL union. Almost as many stayed on the job. Replacements were hired as the factories kept open.

Last week, some strikers asked for their jobs back. Harry Bronston, who heads the two firms, told them to report for work. But when they did, 130 employees who had kept working protested. They said they wouldn't work with the union strikers. They trooped out, and the second strike was on.

After two hours of conferences between Bronston and leaders of the two groups: (1) The original strikers agreed to give up their demand for union recognition, and return to work; and (2) the protest strikers agreed to return, too, providing workers hired as replacements during the strike could keep their jobs.

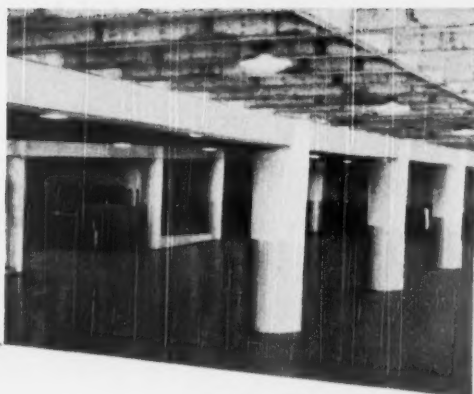
That closed out both strikes at once.

employers, 24 AFL unions, 100,000 workers.

No pension is provided in new pact of F. L. Jacobs Co., Detroit parts manufacturer, and UAW (CIO). The company is giving a 3½¢ hourly raise and a 7¢-an-hour hospital and insurance program. The contract runs three years, during which pensions are a closed issue.

Allis-Chalmers and UAW (CIO) have signed a new five-year contract for 10,000 workers at West Allis, Wis. Patterned after GM's contract, it includes a pension plan and a 3¢ raise now, plus 3¢ pay boosts starting in 1951.

The Pictures—Cover by Charles Rotkin. Acme—20, 97, 98; East—22, 23; Bob Iser—70.



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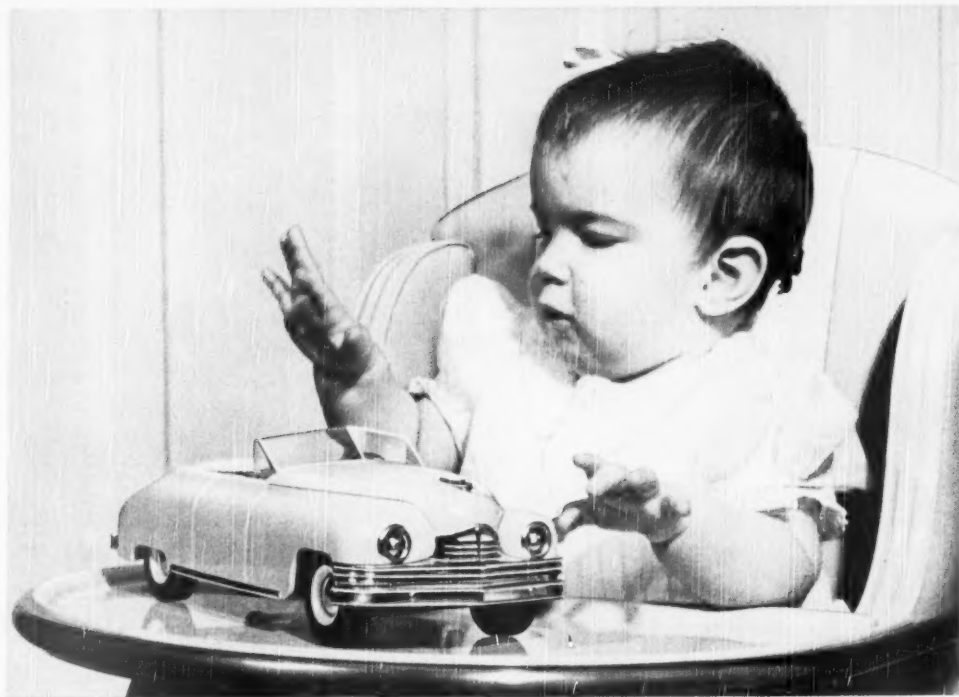
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**1950**  
114,287  
Shareholders



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## PACKARD

ASK THE MAN WHO OWNS ONE



# INTERNATIONAL OUTLOOK

BUSINESS WEEK

JULY 8, 1950



Is Moscow bent on getting South Korea at any cost?

Washington still thinks not, that Stalin has left himself room for a backdown.

But western European diplomats aren't so confident. They think Stalin can and will pour troops, tanks, and planes into South Korea a lot faster than the U. S.

Stalin may try for a diplomatic as well as military victory, European diplomats say.

First, he will liquidate the South Korean forces, avoiding U. S. troops as far as possible. Next, he will try to maneuver the United Nations Security Council into discussing a "cease fire" that would block further police action.

Then the danger would be that India or some other nation might fall for this move. We would have to back down or dig in for a long fight in Korea without full U. N. backing. (So far, the U. S. has had complete endorsement from Security Council members, except Yugoslavia and Egypt.)

A stalemate in Korea would hurt the U. S. a lot.

Our only hope in Asia then would be a countermove elsewhere—say, in Indo-China.

For example, Washington might press Paris to do two things:

(1) Put French forces in Indo-China under the U. N. flag.

(2) Guarantee complete French withdrawal from Indo-China once the Communists have been cleaned out.

Prolonged fighting in Korea will be dangerous on the propaganda front, too. It will give the Kremlin time to crank up its machine everywhere.

"Hate America" rallies already are going on behind the Iron Curtain. The Soviet press is whipping Russians into a white heat. Soon western European Communists will take up the theme.

In shaky spots—like Italy and France—these demonstrations do a lot to sap the will to resist. And so far, the West has found no good antidote.

U. S. garrisons will be in the Far East for a long time to come (page 97).

That's the hard lesson Korea is teaching us. U. S. troops will have to keep order in non-Communist Asia—much as British troops garrisoned empire posts in the 19th century. If a U. S. division had been left in South Korea, maybe we wouldn't face the present situation.

But it will be a lot harder for the U. S. to keep garrisons in Asia than it was for the British. Our action must be reconciled with present-day Asian nationalism. That will make the U. S. unpopular in Asia unless we move fast to build efficient local governments.

British Conservatives think the war threat will put new life into the Schuman coal-steel pool.

The Conservatives expect still stronger U. S. support for the plan. Reason: It's the one way to get German rearmament without French opposition.

If the U. S. does increase its pressure, look for the Conservatives to chime in.

West Germans wonder if they are due for the same treatment Stalin is

# INTERNATIONAL OUTLOOK (Continued)

BUSINESS WEEK

JULY 8, 1950

giving the South Koreans. What's more, the Germans don't think the Atlantic Pact powers could do much to save them at the moment. Nor do they put much faith in military police units such as the Russians have set up in East Germany.

The fact is, western Germany is putting its faith in an indefinite occupation by British, U.S., and French forces. Right now, the Germans wouldn't mind if these forces were strengthened.

•  
New weapons hold the only hope of defending western Europe. That's the view of European military experts in Paris.

These experts see no chance of stopping Russia until they get some of the new weapons promised by the U.S. They know that atomic bombing alone won't do the job.

Their big worry is this: How can the U.S. afford to supply secret weapons to countries like France and Italy, where one out of four soldiers probably votes Communist?

Still, France may soon be asking the U.S. for help in atomic research for military purposes. Paris would make its bid through the Atlantic Pact machinery.

•  
The French political mess is worrying the West.

After just two days, Henri Queuille's new government was toppled. The Socialists couldn't stomach Conservatives like Paul Reynaud in the cabinet.

Now the search is on again for someone who can bring the moderates and the Socialists together. Chances are the search will be a long one.

What's desperately needed is a caretaker government that can pave the way for new elections. This government would have to reform the electoral laws.

When they do come, the elections will point up the deep ideological division in France—between Marxism and a rather musty prewar conservatism.

•  
French economists fear the Korean war will generate a new round of inflation in the West.

They think the danger isn't so great in western Europe. In that area, there's a tendency towards recession already. It's the U.S. they're worried about.

They wonder just how much more boom the U.S. economy can stand. And they know there won't be any solution to the U.S.-Europe trade problem until prices really get steady.

•  
So far, the British have gained plenty from U.S. prosperity.

London's dollar reserves on June 30 reached \$2.4-billion. Biggest contributor: U.S. buying of sterling-area raw materials such as rubber and tin.

But British industry is paying high prices, too, for these same products. And that threatens to send up British export prices.

•  
Chancellor Cripps is just as fearful that British wages may get out of hand. He's ready to let the wage freeze thaw, but not overnight.

On the other hand, British union leaders are demanding a return to free collective bargaining.

So Cripps will be taking political risks if he bucks the unions too hard.

# BUSINESS ABROAD



IN FORMOSA, Indo-China, and the Philippines, the U.S. is now committed to give political and economic aid.

## All Over Asia—U.S. Is In Deep

Korean move sets the pace for bolstering of defense lines throughout the Far East.

Last week, the U.S. stretched its worldwide military and economic commitments to the limit. When President Truman ordered police action in Korea, plus strengthening of defense lines in Formosa, Indo-China, and the Philippines, he took on the job of propping up the whole non-Communist world.

It's too soon to say exactly how big the new job in Asia will be. A lot will depend on how successful U.S. intervention is in Korea. And that, in turn, depends on what Moscow decides to do.

But, on the assumption that there will be no general war, one thing is certain: The U.S. now is in Asia up to its ears, both militarily and economically. Before we're done, the job there probably will prove far more complex than anything we've attempted in Europe and, in the end, perhaps almost as expensive.

• **How Much?**—No one knows now what it will cost to stabilize things in Asia, nor how much time it will take. You have this guide, though: It took two years and cost about \$2-billion to save Greece from the Communists, and it is still costing money to make that country strong enough to defend itself internally.

Once immediate military needs are taken care of, there will be a big boost in Point 4 help for Asia. The U.S. may also have to do something to help meet the area's food needs. A commit-

ment to feed an Asian country, though, is as risky as anything could be. It would be a question of pitting our ability to produce food against the tendency of the Asian people to out-grow all food supplies.

• **Different Story**—The job the U.S. has taken on in Asia will differ plenty from what we've had to do in Western Europe, or even from what we've done in Greece. From the start, the U.S. will have to take on responsibilities that could be left to the local governments in Europe. In effect, the American flag will be raised wherever the situation looks desperate.

• **Mission**—A U.S. military mission is going to Indo-China. That means a closer watch on the U.S. military aid that goes to the French forces as well as to Bao Dai.

However, for some time yet, French troops will stand between Bao Dai and the Communists. Thus the U.S. military mission to Indo-China will have a delicate job of balancing immediate security needs against our longer-run goal of promoting Indo-Chinese independence.

An American-run defense of Indo-China isn't impossible, especially if Ho Chi-minh launches an offensive. Unless Moscow now wants to back down in the Far East, this offensive can be expected soon.

More U.S. troops are going to the

Philippines, and more economic aid is likely to follow. But so is more U.S. supervision in Manila. An economic mission from Washington is due in the island soon. We aren't ready to take any more chances, either with the Huk rebels or with the Philippine economic mess. In effect, there will be a partial U.S. reoccupation of the islands.

• **Off Guard**—At least one lesson has been learned in Korea. The attack there caught us unprepared—committed thoroughly but only half ready to back up the commitment. Here's the story:

After U.S. occupation troops left South Korea last December, American officials tried to build up the new republic's capacity to defend itself. A 500-man military mission was left on the spot to train the South Korean army. An ECA mission was on hand to administer \$100-million in economic aid from last year and another \$100-million coming up this year.

• **Sad Shape**—The two missions were working with a government that had all the drawbacks of an oriental regime taking its first dose of democracy. Korean officials proved to be untrained, inept, and often corrupt. U.S. administrators waited at the docks and airfields to receive U.S. aid and see that it was put to good use. But, for the most part, the Koreans ran their own show.

• **Too Late**—With more time, U.S. policy in South Korea might have worked. But there wasn't time. Nor is there likely to be time in Indo-China or the Philippines. That's why more

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drastic steps are being taken in these spots to keep the Communists out.

It won't be easy to apply the new techniques in Formosa. Chiang Kai-shek is a past master at evading U.S. controls. In his present plight, Chiang might make the necessary concessions. But he won't want to give up his avowed crusade to reconquer the Chinese mainland. And there's no chance the U.S. will back this crusade now.

• **Formosa Follow-through**—The U.S. aim will probably be to return Formosa to Japan or place it under a United Nations trusteeship. Either would meet the objectives of U.S. policy. Either would also mean a long-term U.S. commitment to defend the island.

The situation in the rest of non-Communist Asia looked about this way at the beginning of the week:

**Japan:** A U.S.-Japanese alliance, with permanent American bases on the islands, is certain now (BW—Jun. 24 '50, p. 73). A U.S. failure in Korea would make this difficult, of course. It would boost Communist prestige and frighten most Japanese into demanding that Japan be neutral in the East-West struggle. On the other hand, defeat of the Korean Communists would mean the end of Communist strength in Japan.

**India:** Prime Minister Nehru's support of the U.S. police action in Korea is a great victory for the West. There had been fears that Nehru would continue to sit on the fence. Only three weeks ago, Nehru had told an Indo-

nesian audience that India wanted to be left to herself, would avoid all entanglements unless forced into them.

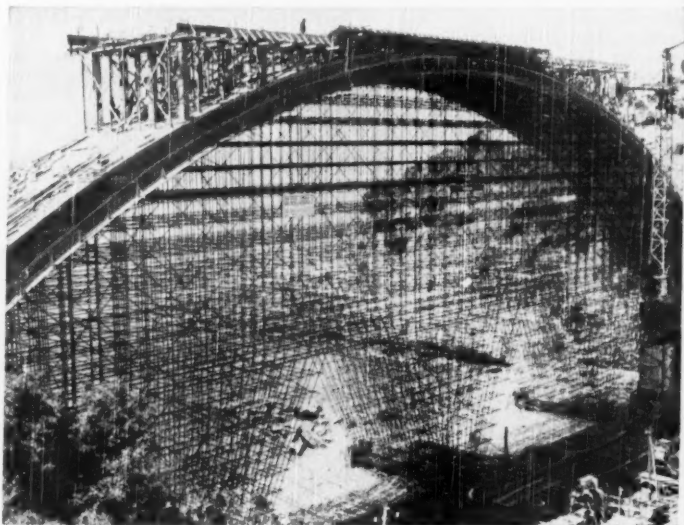
Now the Delhi government will have to be prepared for Communist infiltration in Nepal, a semi-independent state on India's northern border. There's likely to be widespread sabotage in India, plus a drive by landless peasants to take over land in the northeastern part of the country.

**Indonesia:** Nehru's stand will remove any doubts the Indonesian government has had about taking sides in the cold war. What may come next is the incorporation of Indonesia into the U.S.-British defense system in southeast Asia. That would give the Indonesians confidence to carry through their own program of economic reconstruction.

**Malaya:** The British have been preparing a strong counteroffensive against Communist guerrillas in the Malayan peninsula. Now this will be launched without delay, and chances of success are good.

**Burma:** The independent Burmese government is still in serious trouble. But if Burmese Communists should gain much ground, Indian or combined Indian-British intervention in Burma seems likely.

**Thailand:** This country won't be in much danger from the Communists unless Indo-China, Burma, or Malaya should fall. If a dangerous situation does develop, however, U.S. military help can be expected.



## Italy Bridges the Gap

This huge maze of steel pipe will support the roadbed of a brand-new bridge spanning a deep valley near Leghorn. The original was destroyed by naval gunfire. Countless

other bridges were blown up by retreating Germans. Since the war, the Italians, with FRP's help, have rebuilt 3,301 concrete bridges, and 340 larger steel spans.



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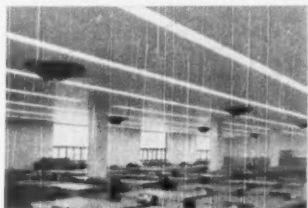
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## U.S. Imports of Primary Products: Where do they come from?

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Data: Dept. of Commerce

## Imports: Vital Need or Competition?

Tariff-conscious business and labor groups will find some Commerce Dept. figures worth noting—especially now, when they're worrying about the tariff cuts the U.S. plans to make next September at Torquay, England (BW—May 27 '50, p120).

The figures on last year's imports into the U.S. show just how dependent the U.S. is on its foreign suppliers.

• **Not All Squeezers**—The table on the opposite page lists all imports over \$20-million in value. It divides them up into two categories: (A) those that don't compete with U.S. production; and (B) those that do. For example, you find that the first three items—animals

and meat, fish, and dairy products—compete with U.S. output. But the fourth item—\$110-million worth of imported furs—is necessary to supplement the domestic supply.

All in all (including the many items the table doesn't show), 1949 imports totaled some \$6.6-billion. And, significantly, 67.4% of them fell into "A" category.

The eight biggest imports—mainly raw materials and foodstuffs—are shown in the pie chart above. They add up to roughly \$3.2-billion, nearly half of the total. Only one—wool—is deemed competitive, and that is now competitive only in a technical sense. U.S. textile

manufacturers couldn't get along without imported wool.

• **Cross-Ocean View**—The chart also gives a hint of how other countries need the U.S. Brazil's coffee sales in the U.S. are its biggest dollar earner. What's more, they represent 39% of Brazil's total exports of all products everywhere. And coffee the U.S. drinks is even more important to Colombia and El Salvador; it adds up to more than two-thirds of the total exports of each.

Newsprint and pulp are the big dollar earners for Canada (page 102); they netted \$556-million in 1949. The U.S. market for Chile's copper accounted for 38% of that country's total sales abroad.

#### U.S. IMPORTS: WHICH ONES PINCH

(1949 Imports in Millions of Dollars)

A. Noncompetitive or supplementary to U.S. production

B. Competitive with U.S. production

Commodity	A	B
Animals, meat.....		135
Fish.....		113
Dairy products.....		21
Furs.....	110	
Hides, leather, skins.....		80
Bristles, feathers.....		22
Coffee.....	796	
Cane sugar.....	371	
Cocoa.....	125	
Alcoholic drinks.....		93
Grains, malts, flour.....		91
Bananas.....	53	
Tea.....	46	
Vegetables.....		44
Spices.....	35	
Fruits, nuts.....		25
Olives, olive oil, dates.....	24	
Coconut meat.....	20	
Rubber.....	241	
Gums and herbs.....	112	
Toluacn.....		75
Copra.....	69	
Tung, coconut, palm oil.....	40	
Wool, incl. waste.....		207
Jute.....	145	
Sisal.....	37	
Wool, worsted, yarn.....		34
Raw cotton, lint.....		30
Flax.....		29
Manila, kapok, etc.....	28	
Woolen apparel.....		20
Newsprint, pulp.....	651	
Lumber (not tropical).....		125
Crude petroleum.....	341	
Petroleum distillates.....		131
Diamonds.....	87	
Stone, plaster, asbestos.....		54
Glass, clay manufactures.....		28
Copper ore, ingots.....	219	
Tin ore, pigs.....	213	
Lead ore, pigs and scrap.....	121	
Iron ore, pigs and scrap.....	71	
Nickel ore, pigs.....	67	
Aluminum ore, scrap.....	49	
Zinc ore.....	47	
Manganese ore.....	38	
Steel Mill Products.....		30
Chrome ore.....	25	
Agricultural equip., parts.....		83
Machinery, except electric.....		23
Nitrates, fertilizer.....	61	
Clocks, watches.....		50
Art, antiques.....	20	



\*CELANESE Corporation of America, Cumberland, Maryland Plant

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No. 7105  
Gross Shipping Weight..... 410 lbs.  
Old Package..... 364 lbs.  
\* New Package..... 46 lbs.  
Weight Saving.....

No. 7038  
Gross Shipping Weight..... 120 lbs.  
Old Package..... 104 lbs.  
\* New Package..... 16 lbs.  
Weight Saving.....

No. 7023  
Gross Shipping Weight..... 39 lbs.  
Old Package..... 34 lbs.  
\* New Package..... 5 lbs.  
Weight Saving.....

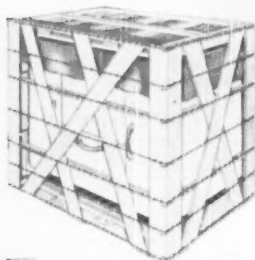
No. 7147  
Gross Shipping Weight..... 95 lbs.  
Old Package..... 83 lbs.  
\* New Package..... 12 lbs.  
Weight Saving.....

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Continental Box Company, Inc.: Houston, Dallas.



## Newsprint Row

Congressional subcommittee pokes into the charge that Canadian mills hold supplies down and keep prices up.

Dirty looks are flashing back and forth across the usually peaceful U.S.-Canadian border. It's all because some U.S. congressmen and newspaper publishers have put the monopoly tag on Canada's biggest dollar-earner—the newsprint industry.

• **A Receptive Ear**—Newspaper publishers in the U.S. have been hollering long and loud about the shortage of newsprint, 80% of which comes from Canada's mills. Their complaints have finally reached the receptive ear of Rep. Emanuel Celler's House subcommittee which is studying monopoly power. So for the last three weeks, the Celler committee has been probing the newsprint industry—and many fingers have been pointed at Canada as the guilty party.

Rep. Celler and some of the witnesses before the committee have charged that the Canadians (many of them backed by American capital) are divvying up the U.S. market, keeping supplies down and prices up. Other witnesses have said they know of no collusive arrangements on the part of the Canadians.

• **Price Fix**—But because the records of the big newsprint companies are safely in Canada, the probers haven't been able to dig up anything conclusive yet. One thing they have found: Newsprint prices are fixed at \$100 a ton. But in a completely free market, they probably would be twice that.

There's even been talk of slapping a tariff on Canadian newsprint which has been on the free list ever since the Underwood Tariff of 1913. But that is pretty much an empty threat.

• **Angry Canadians**—The Canadians are hopping mad. They say all the charges are false. What's more, they claim their newsprint mills have been a lifesaver to the U.S. publishing industry, which has had to face skyrocketing demand.

They blame publishers for not adequately forecasting their requirements. Newsprint men say the only estimate they've ever had came in 1948. Then, U.S. publishers said they would need between 5.4 and 6.2 million tons yearly by 1960. But last year, they gobbled up 5.5 million tons—and expected to need more this year.

• **Need More Mills**—The only answer, say the Canadians, is to build more mills. The trouble has been that both U.S. and Canadian investment has been going into the production of book and magazine papers rather than news-



print. Rising prices in fine papers are one reason why there isn't one newsprint plant among the 10 pulp and paper mills established in Canada since the war.

• **Production Up**—Even so, the Canadians say they've added 12½% to their yearly newsprint production. And they are reluctant to do more. Canada's newsprint industry really went through the wringer during the depression, so it's been wary ever since.

• **Cold-War Angle**—There's a cold-war angle to the newsprint squeeze. Joshua B. Powers, representing a string of foreign newspapers, sounded this warning: Russia is bending all efforts to take over the international market for newsprint, now that the U.S. has tied up virtually all Canadian capacity. Said Powers, "Already Soviet agents have been canvassing Latin American publishers in search of orders, with the usual propagandistic strings attached."

## BUSINESS ABROAD BRIEFS

Two typewriter plants—one in France, the other in Norway—have been bought by Remington Rand. The new plants lengthen RemRand's string of foreign factories to 17.

Ecuador gets International Basic Economy Corp.'s latest venture, IBEC (BW-Apr.15'50,p.132) will set up mechanized agricultural services there, drawing on a \$250,000 Export-Import Bank credit to buy farm equipment in the U.S.

Tractors for the sterling area: Allis-Chalmers Mfg. Co. plans to produce farm tractors and combines at a plant near Stamford, England, starting in September. The move is A.C.'s first in direct manufacturing abroad.

Ranco, Inc., Columbus (Ohio) manufacturer of refrigerator and auto heater controls, has leased a plant near Glasgow, Scotland. It expects to start production there in October.

Fashion turnaround: U.S.-designed women's wear will be manufactured in Europe. New York dressmaker Henry Rosenfeld, Inc., has licensed an Italian company to produce the Rosenfeld line for distribution on the continent and in South America.

Apple growers in British Columbia sent 1,600,000 boxes of apples to England-free. It was a promotion move. But Britain's Ministry of Food gave away only 50,000 boxes, sold the rest. Britain says it needed the money to pay the freight. B. C. apple growers are still angry.

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## A Sorry Performance All Round

They all look woefully wanting in this case—President Truman, the Congress, and the leaders of American industry. None of them emerges with any credit from the foulup over the Atomic Energy Commission.

In this issue (page 58), *BUSINESS WEEK* explores the record and the plans of AEC. By and large, it is a good record—surprisingly good considering the one great weakness our examination revealed: For more than six months, AEC has had no responsible chief.

This is no petty government bureau that has been left leaderless. It is an outfit charged with shaping the keystone of U.S. military strength—at a time when American might is the one crucial factor in world affairs.

Last fall, David Lilienthal announced his intention to resign the chairmanship. This happened at a critical time: The Russians, three years earlier than expected, had just exploded an atom bomb of their own. This fact invalidated the whole schedule on which AEC's program—along with the rest of U.S. military planning—had been based. A complete reorientation of the atomic energy program was in order. If there was ever an inappropriate time to utilize the ambiguous and uneasy title of Acting Chairman—this was it.

Truman set out to find a new chairman for AEC. He decided, we understand, that the chairman ought to be an industrialist. We also understand that over the intervening months he has offered the job to nearly 50 people, and has been refused every time.

That history doesn't reflect much credit on the President. This is not a job which should be allowed to lie around waiting for someone who is willing and anxious to take it. Clearly, in times like these, the proper course is to pick the man best qualified for the job—and then use the full prestige and dignity of the presidency to draft him into the government service.

Nor do we think that the record speaks well for the industry people who have turned down the job or have influenced associates to do so. We can well understand how any man might turn down the job. Business is booming; fortunes are being made and careers established. Any man might well hesitate to turn to a low-paid and thankless job. But there are decent limits to such hesitation.

Actually, of course, it's the thanklessness of the job that turns men away from it. And for that, Congress must bear a large share of the blame. Ever since the first fight over confirmation of the original AEC membership, there have been plenty of congressmen willing to play post-office politics with AEC and few congressmen to call them to account.

Last week, the congressional committee on atomic energy provided a sample of the sort of thing that makes good men turn down the AEC chairmanship. By a party vote, without hearings, and giving no reasons, the committee rejected the nomination of Acting Chair-

man Sumner Pike to a four-year term on the AEC.

Pike may or may not be qualified for the job. It is our impression that he has been among the sanest and most vigorous members of the commission, that as acting chairman he has performed creditably in a difficult role. Certainly, he has earned, and the stature of the job calls for, something better than the peremptory treatment meted out by the congressional committee.

## How's That Again?

On the front page of its June 28 issue, the Communist Daily Worker said this about events in Korea:

"These war moves of Wall Street's armed intervention are only in the interest of the big industrialists, the powerful bankers who mint their profits from the lives of plain people here and throughout the world."

The first day after the shooting started stock values in Wall Street tumbled a total of \$4-billion.

After five days of contemplating potential profits to be made "from the lives of plain people," this was how Wall Street appraised some leading "military" stocks:

U.S. Steel .....	Down	\$3.50 or 9.7%
Du Pont .....	Down	\$4.37 or 5.4%
General Motors .....	Down	\$9.37 or 9.9%
Allied Chemical .....	Down	\$19.50 or 7.8%

Apparently, Wall Street wasn't reading the Daily Worker.

## High Consumption Plan

In a speech in New York City, B. Earl Puckett of Allied Stores Corp. called on women's apparel designers to join a conspiracy against the U.S. consumer.

Said Puckett: "We in the soft goods line must accelerate obsolescence. It is our job to make women unhappy with what they have in the way of apparel. We must make these women so unhappy that their husbands can find no happiness or peace in their excessive savings."

The trade received Puckett's call for a "new look every year" with violently mixed emotions. The majority of fashion designers and retailers seemed to line up against Puckett. Comments on his proposal ranged from "mark-down suicide" and "poison" to "impossible" and "return to the jungle."

To the American male, these notes of criticism should sound like trumpet blasts signaling a new day. Bruised and battered from his brush with the New Look several years back, he never expected that allies would come to his aid—and from such unexpected quarters. Thus encouraged, he might even manage an indulgent smile at one plaintive line from Puckett's speech:

"Consumers have the money but would prefer to keep it than to exchange it for what we have been offering."

# TOUGH "TALLAPOOSA CROSSING" called for TOUGH J&L WIRE ROPE

# J&L STEEL



*Above:* Pulling a 150-foot section of steel pipe into the river bed with J&L Wire Rope connected to the drum of a winch tractor.

*Left:* Four side-boom tractors, equipped with J&L Wire Rope, guide the pipe into the river.

## Midwestern Constructors, Inc., lays gas pipe lines ... uses J&L Wire Rope in vital operations

Midwestern Constructors, Inc., had a tough problem in laying a 30-inch gas pipe line through the solid granite bed of the Tallapoosa River, near Wadley, Ala. But with the help of J&L Wire Rope, another link was completed in the 2,250-mile pipe line which eventually will supply New York City with 500,000,000 cubic feet of gas daily from Texas fields.

Here was the situation: A steep slope ... swollen waters and swift currents ... solid granite river bed! But in six weeks the job was finished despite adverse conditions, including cold and rainy weather.

Wire ropes were strung across the river to anchor equipment against swift currents. A trench five feet deep and 318

feet long was blasted in the river bed. Tow "cats," side boom "cats," a backhoe, and a clamshell—went to work cleaning out shattered rock and moving the pipeline into position—all equipped with J&L Precisionbilt Wire Rope.

Like many other large contractors, Midwestern Constructors, Inc., of Tulsa, Okla., has standardized on J&L Wire Rope for all its heavy-duty equipment. And for good reason. They have found that J&L Wire Rope lasts longer on tough jobs, raises the safety factor and reduces down-time resulting from wire rope replacements.

J&L Wire Rope is Precisionbilt with quality-controlled steel. Wires, drawn with uniform precision, are fitted to-

gether accurately to provide longest possible wear.

Our handbook, "Wire Rope Is a Machine," tells how to operate and maintain wire rope for maximum service. It is written for the man on the job. If you use wire rope, you'll want a copy. Return the coupon today!



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434 Jones & Laughlin Building  
Pittsburgh 30, Pa.  
Please send me a free copy of your new handbook, "Wire Rope Is a Machine."

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Company \_\_\_\_\_  
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*B. F. Goodrich Chemical Company does not make this fabric. We supply raw materials only.*

## Come into the kitchen-for an idea!

### *Versatile Geon helps the fabric field in a new way*

AT first glance, you might think you're looking at cloth toweling. But, actually, this is a brand-new type of non-woven fabric made of textile fibers with Geon resin as a binder. It is soft, pliable and absolutely sheds no lint. So you can see why the housewives love this new fabric for dishes, glasses, window cleaning, silver polishing and other chores around the house.

And housewives find the price very

attractive. For this new Geon-bonded fabric costs a fraction of the price of cloth, and it can be washed and used over and over again.

Because it contains Geon, this new fabric resists the effects of water, oil, grease, acids and the usual kitchen chemicals. Of course, this is only a small list of Geon's many, many qualities. For Geon runs the gamut from fabric such as this to electrical insulation, even to durable flooring. It can be calendered, extruded, molded, or used as a coating.

If this has given you the start for an

idea, let us help you turn it into a saleable product. We make raw materials only — no finished products. For information and technical help, write Dept. A-7, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. In Canada: Kitchener, Ontario.



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